Bengaluru Metropolitan Transport Corporation

REQUEST FOR PROPOSAL (RFP)
FOR SELECTION OF TECHNOLOGY SOLUTION PROVIDER

FOR

Supply, Commissioning and Maintenance of
SMART ELECTRONIC TICKETING MACHINES
With Comprehensive Ticketing Solution on Rental Basis for BMTC

The tender shall be submitted through e-procurement portal. Vendors need to register in the e-procurement portal to submit their bids online. The tender documents can be viewed free of cost from the e-procurement portal. The tender is invited as per the provision of the Karnataka Transparency in Public Procurement Act-1999 in two cover system i.e., Pre-qualification (Technical Offer) and Commercial Offer separately.
[Web Site: htpp://kppp.karnataka.gov.in]

Communication Address:
Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation (BMTC),
Central Offices, K H Road, Shanthinagar, BENGALURU-27.

Telephone:7760991151
e-Mail: cosp@mybmtc.com,

RFP Notification

RFP Issuing Authority	**Controller of Stores & Purchases,** Bengaluru Metropolitan Transport Corporation (BMTC)
Name of the Project	Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution on Rental Basis for BMTC.
Tender No	BMTC/2024-25/SE0730
Tender Processing Fee	As indicated in the e-Procurement Portal
Earnest Money Deposit	Rs. 6,00,000.00 (To be paid in the e-Procurement Portal online)
Bid Security Deposit	10% of Contract value
Bid Submission Process	All interested bidders shall pay tender processing fee and EMD and submit their Technical and Commercial proposals electronically through the e-Procurement Portal htpp://kppp.karnataka.gov.in
Address to send Pre-bid queries	cosp@mybmtc.com
Nature of bid process	two cover System – Quality Cost Based System (QCBS)
Release of Request for Proposal (Tender) Documents	15.02.2025
Date of Pre - bid	20.02.2025@11.30 hrs
Last date for seeking clarification if any	19.02.2025@17.30 hrs
Last date and time for bid submission/uploading of Bid	03.03.2025@17.00 hrs
Date & Time of opening of Pre-Qualification Bids	05.03.2025@11.30 hrs
Date & Time of opening of Financial Bids	06.03.2025@11.30 hrs
Place of opening of bids	Office of Controller of Stores & Purchases,

and address for communication	Bengaluru Metropolitan Transport Corporation, Central Offices, K H Road, Shanthinagar, BENGALURU-27. e-Mail: cosp@mybmtc.com Telephone: 080-22537462

Note:

1) In the event of the specified date of opening of bids being declared a holiday for the client, the bids shall be opened on the next working day at the same time and venue.
2) Completed bids shall be uploaded on the e-procurement platform by the Bidders using their digital signature key in the manner described under Section-2, Information to Bidders of Bid Documents on or before the stipulated last date & time.

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Glossary

Term	Abbreviation
AFCS	Automatic Fare Collection System
API	Application Program Interface
ARF	Accident Relief Fund
ASRTU	Association of State Transport Undertaking
CCS	Command and Control Station
CSP	Cloud Service Provider
DC	Data Centre
DR	Disaster Recovery
e-Ticketing	Electronic Ticketing System
EMS	Enterprise Management System
EMV	Euro Master Visa
EPKM	Earning per Kilometer
ETM	Electronic Ticketing Machine
FRS	Functional Requirements Specifications
GIS	Geographical Information System
GoI	Government of India
GoK	Government of Karnataka
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSM	Global System for Mobile communications
GTFS	General Transit Feed Specification
HTTPS	Hypertext Transfer Protocol Secure
IA	Implementation Agency
ICT	Information and Communication Technology
INR	Indian Rupee
ISO	International Organization for Standardization
IT	Information Technology
KMPL	Kilometer per Litre
BMTC	Bengaluru Metropolitan Transport Corporation
LOA	Letter of Acceptance
LOI	Letter of Intent
MAF	Manufacturers Authorization Form
NCMC	National Common Mobility Card
NEFT	National Electronic Fund Transfer
NPCI	National Payment Corporation of India
O&M	Operation & Maintenance
OEM	Original Equipment Manufacture
PM	Project Manager
RFP	Request for Proposal
RTGS	Real Time Gross Settlement
SC	Smart Card

Term	Abbreviation
SI	System integrator
SLA	Service Level Agreement
Smart ETM	**Smart Electronic Ticketing Machine** is **Android** based hand held device to capture ticketing information, print tickets and transfer real time ticket data to Central Web based Fare Collection software through **5G/Wi-Fi** interface. The device is inbuilt with **QR Code and RFID readers supporting UPI** and other modes of digital transactions. The device has clear high resolution display and **touch pad** with an intuitive user interface. Inbuilt thermal printer enables printing tickets and reports instantly.
SP	Service Provider
SPV	Special Purpose Vehicle
STU	State Road Transfer Undertaking
VTMS	Vehicle Tracking and Monitoring System

Disclaimer

1. Bengaluru Metropolitan Transport Corporation (hereinafter referred to as BMTC) has issued this Request for Proposal (hereinafter referred to as “RFP”) for Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution on rental basis for BMTC on such terms and conditions as set out in this RFP document, including but not limited to the Technical Specifications set out in different parts of this RFP document.
2. This RFP has been prepared with an intention to invite prospective Applicants/Bidders and to assist them in making their decision of whether or not to submit a proposal. It is hereby, clarified that this RFP is not an agreement and the purpose of this RFP is to provide the bidder(s) with information to assist them in the formulation of their proposals. This RFP document does not purport to contain all the information bidders may require. This RFP document may not be appropriate for all persons, and it is not possible for BMTC to consider the investment objectives, financial situation and particular needs of each bidder.
3. BMTC has taken due care in preparation of information contained herein. However, this information is not intended to be exhaustive. Interested parties are required to make their own inquiries and respondents will be required to confirm in writing that they have done so, and they do not solely rely on the information contained in this RFP in submitting their Proposal. This RFP may include statements, which reflect various assumptions and assessments arrived at by BMTC in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require.
4. This RFP is not an agreement by and between BMTC and the prospective bidders or any other person. However, the selected bidder will enter into an Agreement with BMTC. The information contained in this RFP is provided on the basis that it is non–binding on BMTC, any of its authorities or agencies, or any of their respective officers, employees, agents, or advisors. BMTC makes no representation or warranty and shall incur no liability under any law as to the accuracy, reliability or completeness of the information contained in the RFP document. Each Bidder shall consider the RFP document as per his understanding and capacity. The bidders shall undertake appropriate examination, enquiry and scrutiny of all aspects mentioned in the RFP document before bidding. Bidders are encouraged to take professional help of experts on financial, legal, technical, taxation, and any other matters/ sectors appearing in the document or specified work. Bidders

shall also go through the RFP document in detail and bring to notice of BMTC any kind of error, misprint, inaccuracies, or omission in the document before pre-bid meeting. BMTC reserves the right not to proceed with the project, to alter the timetable reflected in this document, or to change the process and procedure mentioned in the RFP for larger public interest. BMTC also reserves the right to decline to discuss the Project further with any party submitting a proposal.

5. Persons/ entities/ Bidders/ Applicants/ Respondents/ Agencies/ consortium partners submitting this Proposal shall not be entitled for any type of reimbursement from BMTC. The Bidder shall bear all costs arising from, associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by BMTC or any other costs incurred in connection with or relating to its Bid
6. This issue of this RFP does not imply that BMTC is bound to select and pre-qualify Bids for Bid Stage or to appoint the selected Bidder or Bidder, as the case may be, for the project and BMTC reserves the right to reject all or any of the Bids without assigning any reasons whatsoever.
7. BMTC may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this RFP.
8. BMTC, its employees and advisors make no representation or warranty and shall have no liability (for any cost, damage, loss or expense which may arise from or is incurred or suffered on account of anything contained in this RFP or otherwise, including but not limited to the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to be part of this RFP or arising in any way with eligibility of Bidder for participation in the Bidding Process) towards any Applicant or Bidder or a third person, under any law, statute, rule, regulation or tort law, principles of restitution or unjust enrichment or otherwise.
9. BMTC also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statement contained in this RFP.
10. Interested parties, after careful review of all the clauses of this ‘Request for Proposal’, are encouraged to send their suggestions in writing to BMTC on cosp@mybmtc.com. Such suggestions, after review by BMTC, may be incorporated into this ‘Request for Proposal’ as a corrigendum.

Section-1.Letter of Invitation

1. BMTC invites proposals for Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution on rental basis for BMTC. The scope includes supply, implementation, commissioning, maintenance of ETMs along with development, deployment and maintenance of comprehensive Ticketing Solution for BMTC for successful implementation of the project BMTC intends to select the Solution Provider through an open competitive bidding process in accordance with the procedure set out herein.
2. BMTC's guiding principle has always been to ensure the maximum travel comfort, convenience, safety and familiarity for the commuters. Keeping in mind this motto, in order to implement user-friendly ticketing machines and ticketing solution with enablement of digital payments during issue of tickets and passes to commuters, BMTC has decided to introduce smart ETMs in all of its routes.
3. The proposed project will enableseamless card payment/ card validation, UPI payment, QR ticketing, QR validation to manage all kinds of Ticket Transactions and Digital Payments based on the business rules of BMTC. The solution helps the conductors in hassle-free issual of tickets, whereas the organization will benefit from getting the real time information on tickets issued, revenue collected etc. through dashboard.
4. It is proposed to integrate the ETMs with existing Automatic Vehicle Location System (AVLS) and other IT Projects.
5. The successful implementation of the project would promote modal shift from personal transport to public transport. It will also ensure in maintaining BMTC's Technological and Business leadership in the Public Transport sector.
6. The tender is hereby called as under:

Project	**Name of the service**	**EMD Amount(INR)**
ETM	Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution on rental basis for BMTC	Rs. 6,00,000/- (Rs. Six lakhs only)

7. The Solution Provider will be selected under Quality &Cost Based Selection (QCBS) procedures described in this RFP, in accordance with the policies of the Government of Karnataka (GoK), as detailed in the Karnataka Transparency in Public Procurements Act.
8. The RFP includes the following documents:

Section 1 - Letter of Invitation
Section 2 - Information to Bidders
Section 3 - Tender Forms
Section 4 - Terms of Reference
Section 5– Contract for Services.

9. The bidders can view and download the bid documents published by logging on to the following link(htpp://kppp.karnataka.gov.in) The bidders are required to register in the e-procurement portal of Karnataka and obtain a Digital Signature Certificate (DSC) from one of the authorized certifying authorities as detailed in the e-procurement portal to participate in the bidding process. The bid document is available on e-procurement portal from the date specified in time schedule/ e-procurement portal and bids are to be submitted online through the e-procurement portal only on or before due date. Bids submitted manually/ any other forms will not be accepted.
10. Bids must be uploaded online through e-procurement portal. The tender must be submitted through e-procurement portal only within the due date & time or as amended if any. The technical bid will be opened on the date indicated in e-portal in the presence of tenders or their authorized representatives who wish to attend. If the office happens to be closed on the date of opening of the tender as specified, the tender will be opened next working day.
11. A pre-bid meeting will be held on date specified on the e-procurement portal to clarify the queries and to qualify on any matter that may be raised at that stage as stated in the bidding document.
12. Prospective Bidders who wish to seek information regarding online submission of bid through e-procurement portal may visit the e-Governance Department, Gate-2, Multi Storied building, Ambedkar Veedhi, Bengaluru – 560001, on Wednesday and Saturday of every week between 10.30 am to 5.30 pm.
13. Other details can be seen in the bidding documents.
14. The tender processing fees are in addition to the EMD and have to be paid as indicated in the e-procurement portal.

Yours sincerely,
Sd/-
COSP, BMTC

Section-2. Information to Bidders

1. Introduction

a) BMTC intends to select a Technology Solution Provider, in accordance with the Quality Cost Based System (QCBS) method of selection.

b) The bidders are invited to submit a Technical Proposal and a Financial Proposal, for Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution on rental basis for BMTC. The Proposal will be the basis for contract negotiations and ultimately for a signed contract with the selected bidder.

c) The Solution Provider must familiarize themselves with local conditions and take them into account in preparing their Proposals.

d) BMTC will provide the inputs and make available relevant project data and reports.

e) Please note that (i) the costs of preparing the proposal and of negotiating the contract, including a visit to BMTC, are not reimbursable as a direct cost of the Assignment; and (ii) BMTC is not bound to accept any of the Proposals submitted.

2. Registration with e-Procurement Portal

The Bidder shall download and submit their Proposals electronically on the portal https://kppp.karnataka.gov.inBidders need to register in the e-Procurement portal to submit their bids online. The registration can be done in the e-Procurement cell, Department of e-Governance, Govt. of Karnataka, M.S. Building, Bengaluru – 560001.

3. Pre-Bid Meetings

BMTC may host one or more Pre-Bid Meetings, tentatively scheduled at the dates informed. The representatives of the interested organizations may attend the pre-bid meeting at their own cost. The purpose of the meeting is to provide bidders with information regarding the RFP and the proposed solution requirements in reference to the RFP. It will also provide each bidder with an opportunity to seek clarifications regarding any aspect of the RFP and the project.

4. Clarification and amendment of RFP Documents

a) Bidders may request a clarification of any item of the RFP document up to the date mentioned in this RFP. Any request for clarification must be sent in writing or by e-mail to BMTC address indicated in the RFP. BMTC will respond to such requests in the e-procurement portal (including an explanation of the query but

without identifying the source of inquiry) only. No intimation will be made to any prospective bidders.

b) The bidder or his official representative is invited to attend the Pre-Bid Meetings which will take place at Conference Hall, Fourth Floor, BMTC Central Offices, Shanthinagar, Bengaluru in person or VC mode on date indicated in RFP.

c) The purpose of the Pre-Bid Meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

d) The bidder is requested to submit any questions in writing or by e-mail to BMTC as indicated in the format provided **(PQ FORM -1)**or to reach BMTC no later than one day prior to Pre-Bid Meetings.

e) Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be uploaded on the e-procurement portal (htpp://kppp.karnataka.gov.in). Any modification of the bidding documents, which may become necessary as a result of the pre-bid meeting will be made by BMTC exclusively through an Addendumon e-procurement portal.

f) At any time before the submission of proposals, BMTC may, for any reason, whether at its own initiative or in response to a clarification requested by an invited firm, modify the RFP documents by an amendment. Any amendment will be published in e-procurement portal only and will be binding on the bidders. BMTC may at its discretion extend the deadline for the submission of Proposals.

5. Cost of Proposals

The bidder shall bear all costs associated with the preparation, submission of its Proposal, and of negotiating the Contract, including visits to the Client's office etc. are not reimbursable and the Client is not bound to accept any of the proposals submitted and reserves the right to reject any or all proposals without assigning any reasons.

6. Contacting BMTC

From the time of Proposal opening to the time of Contract award, if any bidder wishes to contact BMTC on any matter related to the Proposal, it should do so in writing. If a bidder tries to directly influence BMTC or otherwise interfere in the Proposal evaluation process and the Contract award decision, their Proposal may be rejected.

7. Language of Proposals

The Proposal prepared by the bidder and all correspondence and documents related to the Proposal exchanged by the bidder and BMTC shall be written in the English Language. Any printed literature furnished by the bidder as part of its Proposal may be in a language other than English, as long as such literature is accompanied by a translation of its pertinent passages into the language of the Proposal,

in which case, for purposes of interpretation of the Proposal, the translation shall govern.

8. Earnest Money Deposit (EMD)

a) The EMD (Refundable) as prescribed shall be submitted online through the e-Procurement portal using any of the following 4 modes.
   - Credit Card
   - Direct Debit
   - National Electronic Fund Transfer (NEFT)

b) **OTC payment procedure:** If a contractor/supplier chooses to make payment of EMD/ tender processing fees Over The Counter (OTC) in any of the designated ICICI BANK branches listed in the e-Procurement web-site (https://kppp.karnataka.gov.in), the contractor/ supplier will need to log into e-Procurement system, access the tender for which bid is being created and then select the OTC option under the payment section and print the Challan shown in that section. The printed challan will have the unique bid reference number and the amount to be remitted. Along with the challan, contractor can choose to make the payment either in the form of cash or in the form of Demand Draft. Cheque payments will not be accepted. The contractor is requested to specifically inform the bank officer to input the unique bid reference number printed in the challan in the banking software. Upon successful receipt of the payment, the bank will provide a 16-digit reference number acknowledging the receipt of payment. This 16-digit reference number has to be entered by contractor in the payment section of its bid as payment confirmation before the bid is submitted (i.e.) as a pre-requisite for bid submission.

c) **NEFT payment procedure:** If a contractor/supplier chooses to make payment of EMD/tender processing fees using Reserve Bank of India's (RBI) National Electronic Fund Transfer (NEFT) system, the contractor/supplier will need to log into e-Procurement system, access the tender for which bid is being created and then select the NEFT option under the payment section and print the Challan shown in that section. The printed challan will have the unique bid reference number, account details of Government of Karnataka and the amount to be remitted. The contractor has to submit the printed challan to its bank-branch (NEFT-enabled) and request for an account-to-account transfer, wherein the money will get transferred from the contractors' bank account to GoK's bank account. The contractor should ensure that NEFT transfer instructions are executed and the funds are wired to the Government of Karnataka's principal account before the last date

for bid submission and preferably 24 hours before the last date for bid submission. If the contractor's bank transfers/wires the money after the last date for bid submission, the contractor's bid will be liable for rejection. Upon executing the transfer, the contractor's bank will provide a reference number generated by NEFT software as confirmation of transfer, which has to be entered by contractor in the payment section of its bid as payment confirmation before the bid is submitted (i.e.) as a pre-requisite for bid submission. Also, the account number from which the funds were transferred have to be entered in the e-Procurement system as part of its bid.

d) The bidder who wishes to make Earnest Money Deposit and Tender processing fee payment through Internet Banking facility may do so. The Department is in no way responsible in case the money is not deposited in the notified central pooling account, within the stipulated period. The name of the account and the account number and other details are displayed in the generated challan for the information of the bidder.
e) The supplier/contractor’s bid will be evaluated only on confirmation of receipt of the payment (EMD) in the Government of Karnataka central pooling a/c held at designated Bank.
f) EMD amount will have to be submitted by the supplier/contractor taking into account the following conditions:
    i. EMD will be accepted only in the form of electronic cash (and not through Demand Draft or Bank Guarantee) and will be maintained in the Government’s central pooling account at ICICI Bank/ / designated Bank until the finalization of the Tender.
    ii. The entire EMD amount for a particular tender has to be paid in a single transaction.
    iii. The bidder shall deposit EMD amount as prescribed in e-procurement portal through e-payment.
    iv. For details on e-Payment services refer to e-procurement portal for more details on the process.
g) Any tender not accompanied by an acceptable earnest money deposit and not secured as indicated above shall be rejected by the Employer as non-responsive.
h) The earnest money deposit of unsuccessful Bidders will be returned within 30 days of the end of the tender validity period. The EMD does not carry any interest.
i) The earnest money deposit of the successful Bidder will be discharged when the Bidder has signed the Agreement/ furnished the required Performance Security.
j) The earnest money deposit may be forfeited:
    i. If the Bidder withdraws the Tender after tender opening during

the period of tender validity.

ii. If a Bidder withdraws their bid or increases their quoted prices during the period of bid validity or its extended period, if any.

iii. Deliberate attempts by the Bidder to share wrong information / manipulate information / hide the facts.

iv. in the case of a successful Bidder, if the Bidder fails within the specified time limit to

(1) Sign the Agreement; or

(2) Furnish the required Performance Security

k) The signed Bid Security/EMD Declaration form by the Bidder accepting that if Bidder withdraw or modify their bids during bid validity period, Bidder will be suspended for part of any tendering process in state of Karnataka for period of one year from the date of notice issued.

l) The EMD of unsuccessful bidders will be returned after the tender is finalized.

m) The EMD of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

9. Pre-Qualification Criteria

Bidder must meet all the below mentioned Pre-qualification criteria.

Sl. No.	Parameter	Eligibility criteria	Supporting Document to be Submitted
1	Incorporation of the Company	In case of sole Bidder, bidder should be: • Incorporated or registered in India under the Indian Companies Act, 1956/ 2013 and • Should have been in operation for at least last 3 years from the date of publishing of RFP notice (including name change / impact of mergers or acquisitions) in the area of Software Development/ System Integration/ IT	• Certificate of Registration or Incorporation issued by the competent authority. • Memorandum of Association for companies • Copy of PAN card. • Copy of Registration Certificates with the GST Authorities. • Copy of purchase orders showing at least specified no. of

		Services Implementation/ Ticketing Solution. In case of Consortium, Prime bidder should be: • Incorporated or registered in India under the Indian Companies Act, 1956/ 2013 and • Should have been in operation for at least last 5 years from the date of publishing of RFP notice (including name change / impact of mergers or acquisitions) and associated bidder should be in operation for at least last 3 years in the area of Software Development/ System Integration/ IT Services Implementation/ Ticketing Solution. • Registered with GST Authorities in India The bidder should be a Sole Bidder or Consortium of maximum two bidders including Prime Bidder are eligible to participate in the tender.	years of operations OR Certified true copy of balance sheet and P&L statements for the specified no. of years. • Consortium Agreement (in case of consortium) clearly stating the roles and responsibilities of each member.
2	Annual Turnover	The bidder should have cumulative turnover of minimum **INR 50 crores** for any three (3) financial years, out of preceding last five (5) audited financial years (2019-20, 2020-21, 2021-22, 2022-23, 2023-24). During these three(3) financial years, the annual turnover should be minimum **INR 10 crores** • Bidder in case of sole bidder.	Audited financial statements for last five (5) financial years. Certificate from the Chartered Accountant/ Statutory Auditor on turnover details over the last five (5) audited financial years.

		• Prime Bidder in case of Consortium.	
3	Net worth	The bidder in case sole bidder OR all members in case of Consortium should have positive net worth in the preceding three years (2021-22, 2022-23, 2023-24).	• Certificate duly signed by Statutory Auditor or Certificate from Chartered Accountant of the Bidder.
4	Certification	The bidder should hold ISO certificates as below: • ISO 9001:2015 or Higher Quality Management • ISO 20000-1:2018 IT Service Management System(preferred) • ISO 27001: 2013 IT Security Management System. • Bidder in case of sole bidder. • Any member in case of Consortium.	• Copies of Valid certifications Bidder shall ensure that the Certifications continue to remain valid throughout project period.
5	Experience in ETM ticketing and Web based centralized fare collection application and Digital Payment through ETMs.	The bidders should have supplied and implemented at least a total of 2500 Nos. of Smart ETMs to State Transport undertaking in India over the last five (5) years (2019-20, 2020-21, 2021-22, 2022-23, 2023-24) in single or in maximum of three orders. The orders on CAPEX model or RENTAL model or Combination of both CAPEX and RENTAL shall be considered. For example: The bidder has supplied and implemented 1000 Smart ETMs in 2019-20, 500 in 2020-21 and 1000 in 2022-23, the bid will be considered as the bidder has supplied and	Copy of purchase orders from State Transport Undertaking/ System Integrator. Copies of Delivery Challan/ Invoices for the proof of supply of at least 2500 nos. of Smart ETMs to State Transport Undertaking in India. Certificates from STUs with regard to successful implementation of Ticketing solution & Digital payment.

		implemented at least 2500 Smart ETMs in last five years with maximum of three orders. Bidders shall have experience in designing and handling ticketing and web based centralized fare collection application. Bidder shall have experience in any modes of digital payment through ETMs and integration with payment gateway. Bidder in case of sole bidder. Both or any member in case of Consortium	
6	No Blacklisting	The bidder (Sole bidder or any member of Consortium) should not have been blacklisted by any Central/ State Government Department/ Smart City SPV/ PSU in India as on the bid submission date.	Self-declaration by the Bidder and members of Consortium duly notarized and signed by the authorized signatory on Non – judicial stamp paper of appropriate value.
7	Software Development Centre	The bidder should have a registered office at Bengaluru or shall establish the same within 60 days from the date of issue of Purchase Order. The selected bidder shall submit the official documents of established office to BMTC along with name, designation and contact details of working staff. • Bidder in case of sole bidder. • Any member in case of Consortium.	Declaration/ undertaking from the bidder.

The bidders shall upload the scanned copies of the documents on the e-procurement portal along with the bid and other information as indicated in the RFP.

10. Eligibility

a. This invitation for bids is open to all bidders.
b. Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by the GoK.
c. A Bidder may be a firm that is a private entity, a government-owned entity or any combination of such entities in the form of Consortium under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a Consortium, both the members shall be jointly and severally liable for the execution of the contract in accordance with the contract terms. The Consortium shall nominate a representative of Prime Bidder who shall have the authority to conduct all business for and on behalf of any and all the members of the Consortium during the bidding process and, in the event the Consortium is awarded the contract, during contract execution maximum number of members allowed in the Consortium is limited to TWO.
d. Average annual turnover of more than **Rs. 50 Crores** for any three (3) financial years, out of preceding last five (5) audited financial years (2019-20, 2020-21, 2021-22, 2022-23, 2023-24). In case of Consortium, the Prime Bidder shall have the requisite financial qualifications.
e. Any bidder from a country which shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the competent authority. In this regard, a compliance certificate/ declaration to be submitted by the bidder on Rs. 20/- & above stamp paper as per the format **(PQ FORM -10)**(Refer Clause-11 of Section (2)below regarding restriction on public procurements from bidder of such country/ countries which shares land border with India).

11. Land Border Restrictions

Restrictions on public procurements from bidders of such country/ countries which shares a Land Border with India.

The following Eligibility Clauses and Sub Contract Clauses have been incorporated in the tender as per the GoI Letter No. F.No. 6/18/2019 - PPD dtd: 23.07.2020, Orders (Public Procurement No. 1 and 2) dated 23.07.2020 & Order (Public Procurement No. 3) dated 24.07.2020, Orders of GoK vide No. FD 455 Exp-12 2020 Bengaluru Dated: 25.08.2020, GoI OM vide No. F.No. 18/37/2020-PPD dtd: 08.02.2021 and O.M No. F.12/1/2021 – PPD)Pt), dated: 02-03-2021 and GoK circular vide No. FD 455 Exp-12/2020 Bengaluru Dtd: 25-08-2020, FD 455 Exp-12/2020 Bengaluru Dtd: 10.03.2021 and FD 455 Exp-12/2020

Bengaluru Dtd: 29.03.2021.

Sl. No.	Clauses
1	Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
1.1	"Bidder" (including the term 'tenderer', 'consultant' or 'system integrator' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
1.2	"Bidder from a country which shares a land border with India" for the purpose of this Order means: - a. An entity incorporated, established or registered in such a country; or
	b. A subsidiary of an entity incorporated, established or registered in such a country; or
	c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
	d. An entity whose beneficial owner is situated in such a country; or
	e. An Indian (or other) agent of such an entity; or
	f. A natural person who is a citizen of such a country; or
	g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
1.3	The beneficial owner for the purpose of above clause will be as under: i. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation – a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. Of shares or capital or profits of the company; b. "Control" shall include the right to appoint majority of the directors or to control the management or policy

Sl. No.	Clauses
	decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
	ii. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
	iii. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
	iv. Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
	v. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
1.4	An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
1.5	A certificate for having read the above clauses is required to be submitted/ and uploaded by the tenderer separately as per format at **PQ FORM -10** (to be downloaded and uploaded to the e-procurement portal duly signed and attached to hard copies of the tender documents.
1.6	In case of Work contract including turnkey contract. The successful bidder will not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority. A declaration to be submitted during submission of tender as per **PQ FORM -10**.
1.7	i. A bidder is permitted to procure raw material, components, subassemblies etc. from the vendors from countries which shares a land border with India. Such vendors will not be required to be registered with the

Sl. No.	Clauses
	Competent Authority, as it is not regarded as "sub-contracting". ii. However, in case a bidder has proposed to supply finished goods procured directly/ indirectly from the vendors from the countries sharing land border with India, such vendor will be required to be registered with the Competent Authority. iii. Procurement of Spare parts and other essential service support like Annual Maintenance Contract (AMC)/ Comprehensive Maintenance Contract (CMC) including consumables for closed systems, from Original Equipment Manufacturers (OEMs) or their Authorized agents, shall be exempted from the requirement of registration.

In this regard, the bidders are required to provide undertaking by submitting the compliance as per **PQ FORM -10**under the Tender Forms.

12. Technical Proposal

a. In preparing the Technical Proposal, bidders are expected to examine the documents comprising this RFP in detail. Material deficiencies in providing the information requested may result in rejection of a Proposal.
b. One sample device shall be submitted to the Office of the Controller of Stores & Purchases, BMTC, Central Offices, Bengaluru after submission of technical bid, well before opening of the technical proposal, on non-returnable basis.
c. The detailed technical data/ brochures/ literature with respect to the devices shall be enclosed along with technical proposal. Copies of all certifications like ISO, EMV, PCI, qSPARC etc. as specified in RFP shall be enclosed along with technical proposal.
d. The bidder should provide compliance to the requirement specifications specified in the Annexure – I of this RFP(**TQ FORM -3**) while submitting the technical proposal.
e. The selected bidder need to arrange for testing of three ETMs, at Government recognized testing labs like STQC, ECIL etc. at his own cost as per the prevailing standard testing practices and meeting RFP requirements, prior to supply. Testing reports need to be submitted while submitting the Performance Bank Guarantee. The testing report shall cover dust, vibration, humidity, ruggedness etc. as per the prevailing norms followed by testing agencies.
f. Bidder must be ready to demonstrate the machines for various hardware features after opening of technical proposal.

g. The Technical Proposal shall not include any financial information.

h. The Bidder's technical solution proposed in the Technical Evaluation bid shall be evaluated as per the evaluation criteria in the below mentioned table:

- Each Technical Proposal shall be assigned a technical score out of a maximum of 100 Marks.
- In order to qualify for the opening of financial proposal, the Bidder must get a minimum overall technical score of 70 (Seventy) Marks.
- The financial proposals of Bidders who do not qualify technically shall be kept unopened in the e-Tendering system.
- With respect to Sl. No. 1(a) to 1(e), profile of each key Staff/ resources proposed will be evaluated based on the CVs of respective key staff submitted by the bidder in TQ FORM-1
- With respect to Sl. No. 2(A) and 2(B) Technical Capability of the bidder will be evaluated based on the details furnished through PQ FORM-5, enclosed with supporting documents.

Sl. No.	Parameter	Item wise Marks	Max Marks
1	**Profile of Key Staff/ Resources Proposed**		**5**
	a) Project Manager	1	
	b) Solution Architect	1	
	c) Cloud / Network Administrator	1	
	d) Database Administrator	1	
	e) UI/UX Design/ Application Development and Maintenance Engineer	1	
2	**Technical Capability**		**20**
	A. **Previous Experience:** Successfully supplied and implemented Android based smart ETMs enabled with digital payment features over the last five years (2019-20, 2020-21, 2021-22, 2022-23, 2023-24) in single or in maximum of three orders. i. Supply of 2500-5000 Smart ETMs ii. Supply of 5001 and above Smart ETMs	5 10	10
	B. Domain Knowledge: The bidders should have supplied and implemented at least a total of 2500 Nos. of Smart ETMs to State Transport undertaking in India over the last five years (2019-20, 2020-21, 2021-22, 2022-23, 2023-24) in single or in maximum		10

	of three orders. i. ETMs supplied to State Transport Undertakings ii. ETMs supplied and implemented with digital payment feature. iii. Integration of Smart ETMs with Centralized fare collection Application.	5 3 2	
3	**Presentation on Business Solution Proposed**		**10**
	A. Implementation Strategy and Timelines	5	
	B. Service Support Proposed	5	
4	Proof of Concept/ Live Demonstration of ETMs along with Central Web based Fare Collection software (The bidder should demonstrate the features of the ETM being proposed through a live demonstration or using prototype application)		**65**
	(a) Ticketing Features as per RFP 1) Print full and half tickets with details of cess, GST, Toll ticket, Toll pass ticket etc. 2) Print luggage tickets. 3) Print senior citizen tickets and Retired employees tickets. 4) Day Pass Issue 5) Pass entry option. 6) Print Women ticket with zero value.	 2 2 2 2 1 1	10
	(b) RFID and Digital Payment Features 1) QR Ticketing (2 Marks Each) • Generate dynamic QR code in ETM. • Print ticket on successful payment through UPI. 2) Ticketing through closed loop stored value card • Read balance amount in the card. • Issue ticket and update balance by tapping card. • Recharge card through ETM. 3) Student Pass Smart Card Validation • Validate date. • Validate route. • Accept and print ticket if valid. 4) Paper QR Code Validation 5) Read and validate any open /closed loop card.	 4 6 6 2 2	20
	(c) Generation of following reports as per RFP. 1. Trip Sheet 2. Revenue Collection Report	 1 1	5

	3. All Trip Status Report (Detailed/Consolidated) 4. Ticket Details Report 5. Stage-wise Report	1 1 1	
	(d) Security Features in ETM and Central Web based Fare Collection software		5
	1. Ability to issue tickets only after loading of waybill. 2. Facility to print collection report only after closing the duty/ schedule. Ticket issue post generation of collection report should not be allowed. 3. Ability to block issuing of tickets 3 days after loading of waybill. Number of days should be configurable. 4. Ability to block the issuing of tickets after specified revenue limit is reached for the schedule. Revenue limit should be configurable. 5. Ability to the lock and unlock the ETM from terminal management application.	1 1 1 1 1	
	(e) Central Web based Fare Collection software a) User Interface (UI) designof application b) Auto/Manual Waybill Generation c) Waybill Audit d) Conductor waybill abstract e) Revenue Collection Statement f) Cash Collection Report g) Bata and incentive calculation h) Rate master i) Flexifare	2 1 1 1 1 1 1 1 1	10
	(f) Terminal Management Software and Dashboard Design		15
	i. Over the air uploading of firmware, master data from cloud to ETM • Should demonstrate updating of firmware/ fare/ route master data to an ETM in real time	3	
	ii. Real time data transfer from ETM to cloud • Should demonstrate ticket data transfer from ETM to cloud for all the tickets issued (during the demonstration) in real time	2	
	iii. Dashboard Features • Should demonstrate facility to	10	

	generate real time revenue collection and ticket issued details. • Should be able to display information on total number of ETMs in operation. • Tracking of ETM geo location. • Graphical/ Chart representation of ticket data. • Look and feel of Dashboard.		
	TOTAL		**100**

13. Technical Proposal Instructions and Conditions

The technical proposal should address all the areas/ sections as specified in the Technical Evaluation Criteria and contain a detailed description of how the bidder will provide the required services outlined in this RFP. It should articulate in detail, as to how the bidder's Technical Solution meets the requirements specified in the RFP.

The technical proposal must not contain any pricing information. Mentioning of Price in the Technical bid will lead to disqualification of the bidder. In submitting additional information, please mark it as "supplementary" to the required response. Additional information directly relevant to the scope of services of the RFP may be submitted to accompany the proposal. However, it is clearly understood that the additional services or supplementary information will not be considered for evaluation purposes. If the bidder wishes to propose additional services or enhanced levels of services (without any additional financial implication) beyond the scope of this RFP, the proposal must include a description of such services as a separate and distinct attachment to the proposal. Bidder to submit the Undertaking on Compliance and Sizing of Infrastructure**(TQ FORM -2)**.

The technical proposal should address the following:

a. Compliance to all the requirements of BMTC.
b. A brief about the bidder (s) and their service/expertise areas.
c. Understanding of the Project.
d. Approach & Methodology to be adopted.
e. Project Plan.
f. Proposed Solution covering following minimal aspects:
    - Overview of the Proposed Solution that meets the requirements specified in the RFP
    - Overall proposed Solution Architecture including Central Web based Fare Collection software, ETMs and other hardware requirements.
    - How the proposed solution addresses scalability, availability, performance, security, and manageability?
    - How the bidder proposes to implement the solution within the

given timelines

g. Operational environment.
h. Project team structure, size, capability, and deployment plan (Total Staffing plan including numbers)
i. Profiles of resources proposed for the project.
j. The bidder shall provide an undertaking, on a separate letter on company letter head signed by the authorized signatory, in the technical bid that all the profiles of the proposed resources are complete and accurate. In addition, each profile shall be signed by the resource (of whom the profile is submitted) and the authorized signatory.
k. Details of Consortium Partners/OEMs, if any.
l. Project Management, reporting and review methodology.
m. Strategy for conducting Operations & Maintenance.
n. Risk Management approach and plan.
o. Key Deliverables (along with example deliverables, where possible)

14. Consortium Member Statement

The Bidder shall provide the following information in respect of the consortium members that the bidder may engage to provide any of the services required under this RFP. For each proposed consortium member, bidder shall provide the following:

a. Joint Bidding Agreement between the consortium members specifying their scope of works as part of Consortium agreement.

b. Brief description of nature of products/services to be provided by consortium member out of the total scope of work of this project.
c. Head and branch offices (if responsible for work under this contract) (provide street and mailing addresses, phone, fax, and email).
d. Date, form, and state of incorporation.
e. Contract administrator (name, business address, fax, phone, and email address of individual responsible for administering any contract that might result from this RFP).
f. Company principals (name, title, and business address); and,
g. Current or prior successful partnerships with proposed consortium member including client reference (contact name, phone number, dates when services were performed), if any.
h. In the event of any dispute arising between Consortium Members during the Contract Period, the parties shall make reasonable efforts to resolve it amicably without causing any negative impact on the implementation and operation of the Project. However, if the Authority determines that the dispute between Consortium members is adversely affecting the

implementation and operation of the Project, the Authority reserves the right, at its sole discretion and in the best interest of the Project, to either terminate the Contract following the appropriate due process or to impose a binding solution.

15. Financial Proposal

a) In preparing the Financial Proposal, bidders are expected to take into account the requirements and conditions of the RFP documents. Bid should be submitted in the e-procurement portal.
b) Bidders shall express the price of their services in Indian Rupees.
c) The proposals must remain valid up to 180 days after the submission date.

16. Period of Validity of the Proposal

a) Proposals shall remain valid for a period not less than 180 days after the deadline date for proposal submission specified in RFP. A Proposal valid for a shorter period shall be rejected by BMTC as non-responsive.
b) In exceptional circumstances, prior to expiry of the Proposal validity period, BMTC may request that the Bidders extend the period of validity for a specified additional period. The request and the responses to the request shall be made in writing. A bidder agreeing to the request will not be required or permitted to modify its Proposal.

17. Format and Signing of Proposal

a) The Proposal, and its copy, shall be typed or written in indelible ink and signed by the authorized signatory of the bidder who shall initial each page, in blue ink. In case of printed and published documents, only the cover shall be initialled. All the alterations, omissions, additions, or any other amendments made to the Proposal shall be initialled by the person(s) signing the Proposal. The Proposals must be properly signed by the authorized representative (the “Authorized Representative”) as detailed below:
   - by a partner, in case of a partnership firm and/or a limited liability partnership; or
   - by a duly authorized person holding the Power of Attorney, in case of a Limited Company or a Corporation; or
   - by the Authorized Representative of the Prime Bidder, in case of consortium.
b) A copy of the Power of Attorney certified under the hands of a partner or director of the Applicant and notarized by a notary public in the form specified in RFP Document shall accompany the Proposal.

18. Submission, Receipt and Opening of Proposal

a) The original Technical and Financial Proposal should be submitted in e-procurement portal(htpp://kppp.karnataka.gov.in), and no hard copy of the financial proposal shall be submitted.
   - **Electronic Proposal Submission:** Detailed guidelines for viewing Proposals and submission of online Proposals are given on the website. The Invitation for Proposals is published on this website. Bidder can logon to this website and view the Invitation for Proposals and can view the details of works for which Proposals are invited. The prospective bidder shall submit Proposals online; for this, the bidder is required to have enrolment/registration in the website and should have valid Digital Signature Certificate (DSC) Keys. The DSC can be obtained from any authorized certifying agencies. The bidder should register in the web site htpp://kppp.karnataka.gov.in. After this, the bidder can login the site through the secured login.
   - ***Note:*** BMTC shall not be responsible for any technical issues pertaining to internet connectivity, browser compatibility and any other technical issues pertaining to uploading of bid documents in e-procurement portal. The Bidders are requested to upload their Proposals in e-portal well in advance to avoid non-availability of internet connection.

b) The completed Technical and Financial Proposal shall be uploaded in e-procurement portal (htpp://kppp.karnataka.gov.in)only along with scanned copies of requisite certificates as mentioned in different sections in the RFP Document. No other mode of submission is permitted. Bids submitted by any other means other than e-procurement portal of GoK will be rejected.

c) All Proposals must be submitted not later than the time specified in the RFP. The electronic system would not allow any late submission of Proposals after due date and time as per server time.

d) At the opening of the Technical Proposals the following shall be read out and recorded online simultaneously:
   - the name of the bidder, and
   - any other information deemed appropriate or as indicated in the RFP.

e) BMTC will not be responsible for any delays, loss or non-receipt of Proposals. Proposals submitted by fax, telegram or e-mail shall be rejected.

f) Bidder is required to provide the end rate of ETM and major components like printer, battery, Display, charger, Camera etc. in sealed cover and submit to the office of COSP-BMTC on or before

the due date of submission of bid for records and future reference (PQ FORM-13).

19. Deadline for Submission of Proposal

a) Proposals must be uploaded by the Bidders before due date specified in the RFP through the e-procurement portal. The e-procurement portal will not accept the Proposals after the stipulated date and time (as per the time of the e-procurement portal). The bidders should take care to upload the Proposals and all relevant documents sufficiently well in advance without waiting till the last hour.

b) BMTC may, at its discretion, extend the deadline for submission of Proposals by amending the RFP Documents, in which case all rights and obligations of BMTC and Bidders will thereafter be subject to the deadline as extended. The amendment/ notification will be notified in the e-procurement portal (htpp://kppp.karnataka.gov.in).

20. Late Bids

Bids received after the due date and time as specified in the RFP (including the extended period if any) for any reason whatsoever, shall not be accepted.

21. Only One Proposal

a) Interested bidders may submit only one proposal for an assignment. If a bidder submits more than one bid, such bids shall be disqualified.

b) The firm/ Consortium member should not be a part of otherproposals/Consortium in this tender.

22. Modification and Withdrawal of Proposals

No proposal shall be modified or withdrawn in the intervening period between the deadline for submission of proposals and the expiration of the validity period specified by the bidder on the proposal form. Entire bid security may be forfeited if any of the bidders modify or withdraw their bid during the validity period.

23. Non-Conforming Proposals

A proposal may be construed as a non-conforming proposal and ineligible for consideration if it does not comply with the requirements of this RFP. Failure to comply with the technical requirements, and failure to acknowledge the receipt of amendments, are common causes for holding proposals non-conforming.

24. Disqualification

The bidder’s proposal is liable to be disqualified in the following cases:

a. Proposal submitted without EMD;

b. Proposal not submitted in accordance with the procedure and formats prescribed in this document or treated as non-conforming

proposal;

c. During validity of the proposal, or its extended period, if any, the bidder increases his quoted prices;
d. The bidder qualifies the proposal with its own conditions or assumptions;
e. Proposal is received in incomplete form;
f. Proposal is received after due date and time;
g. Proposal is not accompanied by all the requisite documents;
h. A commercial bid submitted with assumptions or conditions;
   - If the bidder provides any assumptions in the commercial proposal or qualifies the commercial proposal with its own conditions, such proposals will be rejected even if the commercial value of such proposals is the lowest (best value)
i. If bidder provides quotation only for a part of the project;
j. Information submitted in Pre-qualification and technical proposal is found to be misrepresented, incorrect or false, forged documents, accidentally, unwittingly or otherwise, at any time during the processing of the contract (no matter at what stage) or during the tenure of the contract including the extension period of the contract if any;
k. Bidder tries to influence the proposal evaluation process by unlawful/corrupt/fraudulent means at any point of time during the bid process;
l. In case any one bidder submits multiple proposals or if common interests are found in two or more bidders, the bidders are likely to be disqualified;
m. Any PrimeBidder or Consortium Member cannot be part of two Consortium who wish to participate in this tender.
n. Bidder fails to deposit the Performance Bank Guarantee (PBG) or fails to enter into a contract within 10 working days from the date of issue of Letter of Intent or within such extended period, as may be specified by BMTC;
o. Bidders may specifically note that while evaluating the proposals, if it comes to BMTC’s knowledge expressly or implied, that some bidders may have colluded in any manner whatsoever or otherwise joined to form an alliance resulting in delaying the processing of proposal then the bidders so involved are liable to be disqualified for this contract as well as for a further period of three years from participation in any of the tenders floated by BMTC.
p. If, the bid security, Pre-Qualification and technical proposal and the entire documentation submitted along with that found to contain any information on price, pricing policy, pricing mechanism or any information indicative of the commercial aspects of the bid;
q. Bidders or any person acting on its behalf indulges in corrupt and

fraudulent practices; and

r. In case bidder fails to meet any of the bidding requirements as indicated in this RFP.
s. Bids not complying the Bid Evaluation Criteria (BEC) shall not be evaluated further.
t. Any response to bid which includes condition leads to rejection of bid.
u. Any deviation/unconformity on following conditions will result in summarily rejection of the bid:
   - EMD
   - Submission of contract Performance Bank Guarantee as per tender.
   - Period of validity of bid.
   - Firm & fixed prices throughout execution of contract.
   - Offer for complete scope of work.
   - Warranty and guarantee for work executed.
   - Resolution of dispute/ arbitration clause.
   - Payment terms.
   - Penalty provisions.
   - Documents pertaining to GST registration.
   - Force Majeure.
   - Applicable law.
   - Scope of work.
   - Any other condition specifically mentioned in the tender documents elsewhere that non-compliance of the clause lead to rejection of the bid.
   - Disclosure of Price in Un-Priced Bid.

25. Evaluation of proposal

a) A tiered evaluation procedure will be adopted for evaluation of proposals, with the pre-qualification evaluation, technical evaluation and then the commercial proposals are opened and compared.
b) BMTC will review the pre-qualification of the bidders to determine whether the bids are substantially responsive. Bids that are not substantially responsive are liable to be disqualified.
c) BMTC shall constitute a Tender Evaluation Committee to evaluate the responses of the bidders. The Tender Evaluation Committee shall evaluate the responses to the RFP and all supporting documents/documentary evidence. Inability to submit requisite supporting documents/documentary evidence by bidders may lead to rejection of their bids.
d) The Committee may seek inputs from their professional and technical experts in the evaluation process.

e) BMTC reserves the right to do a reference check of the past experience stated by the bidder. Any feedback received during the reference check may be considered during the Technical evaluation process.
f) The decision of the Tender Evaluation Committee in the evaluation of bids shall be final. No correspondence will be entertained outside the process of evaluation with the Committee. The Tender Evaluation Committee may ask for meetings or presentation with the Bidders to seek clarifications or conformations on their bids.
g) The Tender Evaluation Committee reserves the right to reject any or all bids. Each of the responses shall be evaluated as per the criteria and requirements specified in this RFP.
h) During the bid evaluation, BMTC may at its discretion, ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered, or permitted. BMTC is entitled to ask for clarifications as many times as possible from the bidders to the satisfaction of the Technical Evaluation Committee.
i) If the bidder fails to provide the clarification or additional information sought in the stipulated time, the information provided in the technical proposal only will be used for evaluation. It is clearly understood that the additional information or clarification on the technical proposal provided by the bidders will not be the basis for affecting any changes in the Financial Proposal already submitted by the bidders.
j) **Proposal Presentations:** The Tender Evaluation Committee may invite each pre-qualified bidder to make a presentation to BMTC at a date, time and venue decided by BMTC. The bidders shall demonstrate the functionalities of ETMs and Dashboard Application meeting the requirements specified in Technical Evaluation Criteria. The purpose of such presentations would be to allow the Bidders to present their proposed solutions to the Committee and orchestrate the key points in their Proposals.
k) BMTC shall assign technical score to the bidders based on the technical evaluation criteria. The bidders with a technical score above the threshold as specified in the technical evaluation criteria shall technically qualify for the financial opening stage.
l) The commercial bids for the technically qualified bidders will then be opened and reviewed to determine whether the commercial bids are substantially responsive.
m) The evaluation of responsive bids will take into account technical factors, in addition to cost factors. For the purpose of evaluation of bids, Quality Cost Based System (QCBS) will be followed.

n) An Evaluated Bid Score (B) will be calculated for each responsive bid using the following formula, which permits a comprehensive assessment of the bid price and the technical merits of each bid:

$$B \equiv \frac{C_{low}}{C} X + \frac{T}{T_{high}} (1 - X)$$

where

*C = *Bid Price quoted by the bidder*

*C_{low} = *the lowest of all Bid Prices among responsive bids*

T = *the total Technical Score awarded to the bid*

T_{high} = the Technical Score achieved by the bid that was scored highest among all responsive bids

X = weight for the Price (40% i.e. 0.4).

The weightage of Commercial Score is 40% and the weightage of Technical Score is 60%.

o) The bid with the highest Evaluated Bid Score (B) among responsive bids shall be termed as the Lowest Evaluated Bid and is eligible for Contract award, provided the Bidder was prequalified and/or it was found to be qualified to perform the Contract in accordance with the terms of RFP during Post qualification.

* Is sum of unit rate quoted for line item 1 and 2.

26. Negotiations

a) Negotiations will be held at the address indicated in the RFP. The aim is to reach agreement on all points and sign a contract.

b) Negotiations will include a discussion of the Technical Proposal, the proposed methodology (work plan), staffing, financial proposal and any suggestions made by the firm to improve the Terms of Reference.

c) The Client and bidder will then work out final Terms of Reference, staffing, and bar charts indicating activities, staff, periods in the field and in the home office, staff-months, logistics, and reporting. The agreed work plan and final Terms of Reference will then be incorporated in the “Description of Services” and form part of the contract. Special attention will be paid to getting the most the bidder can offer within the available budget and to clearly defining the inputs required from the Client to ensure satisfactory implementation of the Assignment.

d) Having selected the Bidder on the basis of, among other things, an evaluation of proposed key professional staff, the Client expects to negotiate a contract on the basis of the experts named in the Proposal. Before contract negotiations, the Client will require assurances that the experts will be actually available.

e) The Client will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or that such

changes are critical to meet the objectives of the assignment. If this is not the case and if it is established that key staff was offered in the proposal without confirming their availability, the bidder may be disqualified.

f) The negotiations will conclude with a review of the draft form of the contract. To complete negotiations the Client and the bidder will initial the agreed contract.

27. Clients' Right to Accept any Bid and to Reject any or all Bids

BMTC reserves the right to accept or reject any Bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the BMTC's action.

28. Award of Contract

a) BMTC will award the Contract to the successful bidder whose proposal has been determined to be substantially responsive and the contract will be awarded following negotiations with the Bidder with the lowest cost in price bid.

b) On award of the Letter of Intent and its acceptance by the Successful Bidder, the Successful Bidder shall be required to submit the Performance Bank Guarantee (PBG) as per RFP within **10 days** from the date of issue of Letter of Intent and enter into an agreement with BMTC for the successful completion of the scope and tasks as per the Terms and Conditions of the RFP

29. Notification of Award

a) The Bidder whose Bid has been accepted will be notified of the award by BMTC prior to expiration of the Bid validity period by Letter of Intent (LOI).

b) The notification of award will constitute the formation of the Contract, subject only to the furnishing of a performance security in accordance with the provisions of RFP.

30. Signing of Agreement

a) The Agreement will incorporate all agreements between BMTC and the successful Bidder. Within **10 days** of receipt of Work Order, the successful Bidder will sign the Agreement and deliver it to the Client.

b) The Agreement needs to be signed with Chief Systems Manager (CSM), BMTC.

31. Security Deposit/Performance Security

a) The Performance Security shall be provided by the successful bidder in the form of Bank Guarantee (BG) from any of the

Nationalized Banks or Public Sector Banks in favor of the "Controller of Stores and Purchases, BMTC, Bengaluru".

b) The BG shall be furnished for an amount equivalent to **10% of** total contract value within **10 days** of issuance of LOI.
c) The Performance Security shall be valid until 180 days from the Intended date of Completion of the project Period. If the project duration gets extended, the performance security shall be valid until 180 days from the new date of completion of project.
d) The successful bidder shall keep the Performance Bank Guarantee valid and enforceable throughout the Term and for a period of 180 days after the Term. In case the Performance Bank Guarantee provided by the successful bidder to BMTC is set to expire for any reason whatsoever at any time before expiry of 60 days after the Term, the successful bidder shall renew and provide to BMTC renewed Performance Bank Guarantee at least 60days prior to its date of expiry. Upon any failure on part of the successful bidder to renew the Performance Bank Guarantee or to keep it valid and enforceable in terms of this Clause, the Performance Bank Guarantee will be en-cashed by BMTC without giving any notice to the successful bidder or to any other Party.
e) Failure of the successful bidder to comply with the requirements specified in RFP shall constitute a breach of contract, cause for annulment of the award, forfeiture of the Performance Security and any such other remedy the Client may take under the contract.
f) There will be no interest on the Security Deposit amount.
g) This is without prejudice to any other action that may be taken by BMTC under the terms and conditions of this Contract.
h) BMTC, without prejudice to any of its rights or remedies under this Contract, is free to en-cash the Performance Bank Guarantee in part or in full, in terms. In the event of the invocation of any amount of the Performance Bank Guarantee by BMTC under the Contract, the IA shall immediately take appropriate steps to establish the Performance Bank Guarantee at its full value contemplated under the Contract within 15 days of the date when the Performance Bank Guarantee is wholly or partially invoked by BMTC.

32. Confidentiality

Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the bidders who submitted the proposals or to other persons not officially concerned with the process, until the winning bidder has been notified that it has been awarded the contract.

33. Liquidated Damages

If the Supplier fails to perform the Services within the period(s) specified in the RFP, then BMTC shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% of the delivered price of the delayed or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of 10% of the Contract Price. Once the maximum is reached, the Purchaser may consider termination of the Contract. Managing Director, BMTC, will be the final authority on deciding the same.

34. Risk Purchase / Penal Clause

a) If supplies/ services are not made as per the requirement prescribed or the revised requirements intimated by BMTC from time to time, if any, BMTC will get such requirements done from any available source and this extra expenditure incurred thereof will be recovered from the supplier's Bills due for payment or from the performance Bank Guarantee. Further the default supplier has to reimburse all the liquidated damages/losses arising due to non-fulfillment of contractual obligations.

b) The services should meet the specific requirement/ specifications as prescribed in the Tender. If the supplies/ services do not confirm to the specification/ do not meet the performance and if the supplies/ services are not affected as agreed upon, the BMTC reserves the right to Blacklist the firm.

35. Conflict of Interest

Bidder shall furnish an affirmative statement as to the absence of, actual or potential conflict of interest on the part of the Bidder or any prospective subcontractor due to prior, current, or proposed contracts, engagements, or affiliations with BMTC. Additionally, such disclosure shall address any and all potential elements (time frame for service delivery, resource, financial or other) that would adversely impact the ability of the Bidder to complete the requirements as given in the RFP.

36. Fraudulent and Corrupt Practices

BMTC requires that bidders observe the highest standard of ethics during the procurement and execution of contracts. In pursuance of this policy, BMTC defines, for the purposes of this provision, the terms set forth as follows:

- “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and
- “fraudulent practice” means a misrepresentation of facts in order to influence a selection process or the execution of a contract to

the detriment of BMTC, and includes collusive practices among bidders (prior to or after submission of proposals) designed to establish prices at artificial, noncompetitive levels and to deprive BMTC of the benefits of free and open competition.

In such cases,

a) BMTC will reject a proposal for award if it determines that the firm recommended for award has engaged in corrupt or fraudulent activities in competing for the contract in question;
b) Debarment of Tenderer: BMTC may debar bidders for a period not exceeding three years from the participation in its tenders following such procedure as may be prescribed on the ground that bidder is engaged in corrupt or fraudulent practices in competing or executing the contract including misleading the procuring entity at any stages of procurement activity with a fraudulent intension". Provided that, no tenderer shall be debarred without giving opportunity of being heard.
c) BMTC will have the right to inspect bidder's accounts and records relating to the performance of the contract and to have them audited by respective auditors appointed by BMTC relating to this project.

Furthermore, bidders shall be aware of the provision of the General Conditions of Contract.

Measures to be taken after Debarment

The Procurement Entity may take appropriate measures in respect of debarred tenderer or contractor or supplier including one or more of the following, namely,

i. reject the bid and forfeit or encash EMD or Bid Security;
ii. terminate the contract; forfeit or encash the performance guarantee; recover the compensation of loss incurred by Procurement Entity;
iii. forfeit or encash any other security or guarantee or bond provided by such tenderer or contractor or supplier in relation to such procurement; and
iv. recover payments including advance payments, if any, made by the Procurement Entity along with the interest thereon at the prevailing rate of Nationalized Bank.

37. Dispute Resolution

Anydispute arising during Contract Period between the parties shall be resolved amicably without adversely impacting Project Implementation and Operation. In case of any legal dispute arising between BMTC and any Tenderers shall be within the jurisdiction of Bengaluru Courts only.

38. Insolvency and Breach

BMTC may at any time, by notice in writing summarily terminate the contract without compensation to the Bidder in any of the following events, if the Bidder (Sole Bidder or any consortium member in case of consortium):

a) If a firm, any partner thereof, shall at any time, be adjudged insolvent or shall have a receiving order or order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or enter into any assignment or composition with his creditors or suspend payment or if the firm be dissolved under the Partnership Act, or

b) Being a company is wound up voluntarily or by the order of a court or a Receiver, Liquidator, or Manager on behalf of the debenture holders is appointed, or circumstances shall have arisen which entitle the Court or debenture holders to appoint a Receiver, Liquidator or Manager, or

c) Commits any breach of the contract not herein specifically provided for.

d) Provided always that such determination shall not prejudice any right of action or remedy which shall have accrued or shall accrue thereafter to BMTC and provided also the Bidder shall be liable to pay to BMTC any extra expenditure it is thereby put to and the Bidder shall, under no circumstances, be entitled to any gain on repurchase.

Section-3.Tender Forms

PQ FORM 1	Pre-Bid Queries
PQ FORM 2	Bid Submission Covering Letter
PQ FORM 3	Bidder Profile
PQ FORM 4	Consortium Member Details
PQ FORM 5	Previous Implementation Experiences Details
PQ FORM 6	Average Annual Turnover and Net worth
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TQ FORM 1	CV for the Proposed Key Professionals
TQ FORM 2	Undertaking on Compliance and Sizing of Infrastructure
TQ FORM 3	Compliance to Technical and Functional Requirements
ANNEXURE I	ETM Hardware and Functional Specifications
ANNEXURE II	Software Requirements
ANNEXURE III	Performance Bank Guarantee Format
ANNEXURE IV	Power of Attorney Format
ANNEXURE V	List of existing Divisions and Depots of BMTC
ANNEXURE VI	Estimated Requirement of ETMs

PQ FORM 1: Pre-Bid Queries

Bidders requiring specific points of clarification may communicate with BMTC on their Letterheads during the specified period using the following format:

Sl. No.	Clause reference and Title	Page number	Clause Description	Query of the Applicant / Clarification sought by the Applicant

Pre-bid queries to be sent to Email id: cosp@mybmtc.com

NOTE: In case any interested bidders are willing to attend the Pre-bid meeting through VC, kindly click on link below to attend meeting virtually or physically at the client office.

Pre-Bid meeting link shall be intimated

PQ FORM 2: Bid Submission covering Letter

(To be provided on the Company's Letter head)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Dear Sir,

Subject: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

We hereby offer to execute the above mentioned contract for "Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis" as per the condition of RFP and hereby submit our offer to deliver the professional services as specified and described in the RFP.
We attach hereto the technical response as required by the RFP, which constitutes our proposal.
We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to BMTC is true, accurate, verifiable, and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead the department in its short-listing process.
We fully understand and agree to comply that on verification, if any of the information provided here is found to be misleading, we are liable to be dismissed from the selection process or termination of the contract during the project, if selected to do so.
We declare that our offer is valid for a period of 180 days from the date of opening of Technical Offer.
We hereby declare that in case the contract is awarded to us, we shall submit the Performance Bank guarantee in the form prescribed in the Tender Forms section of the RFP.
We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against

fraud and corruption in force in India namely “Prevention of Corruption Act 1988”.

We agree that you are not bound to accept any tender response you may receive. We also agree that you reserve the right in absolute sense to reject all or any of the products / services specified in the tender response.

In addition, we are submitting our Company Profile along with the necessary documents to demonstrate our compliance with the eligibility criteria, as outlined below:

Sl. No.	Information of the Bidder	Details
1	Name of Bidding firm	
2	Address and contact details of Bidding firm	
3	Firm Registration Number and Year of Registration	
4	Area of Business/Services of the Firm/Company	
5	Status of Company (Public Ltd., Pvt., Ltd., etc.)	
6	Company’s Service Tax Registration No.	
7	Company’s Permanent Account Number (PAN), TAN & GSTIN	
8	Company’s Revenue for the last 5 years (Year wise)	
9	Name, Designation and Address of the contact person to whom all references shall be made regarding this RFP	
10	Telephone number of contact person	
11	Mobile number of contact person	
12	E-mail address of contact person	
13	Incorporation of the Company • Certificate of Registration or Incorporation issued by the competent authority. • Memorandum of Association for Companies • Copy of purchase orders showing at least specified no. of years of operations	

<table>
<tr><td></td><td>OR Certified true copy of balance sheet and P&L statements for the specified no. of years.
• Consortium Agreement (in case of Consortium) clearly stating the roles and responsibilities of each member</td><td colspan="5"></td></tr>
<tr><td rowspan="2">14</td><td rowspan="2">Annual Turnover
• Audited financial statements for last five (5) financial years
• Certificate from the Chartered Accountant / Statutory Auditor on turnover details over the last five (5) audited financial years from the date of publishing this RFP.
• PQ FORM 6.</td><td>FY 2019-20</td><td>FY 2020-21</td><td>FY 2021-22</td><td>FY 2022-23</td><td>FY 2023-24</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>15</td><td>Net Worth
(Certificate duly signed by Statutory Auditor or Certificate from Chartered Accountant of the Bidder.)</td><td colspan="5"></td></tr>
<tr><td rowspan="2">16</td><td rowspan="2">Work completion certificates of previous experience</td><td>Experience 1</td><td colspan="2">Experience 2</td><td colspan="2">Experience 3</td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td>17</td><td>Experience in ETM ticketing and centralized fare collection application and Digital Payment through ETMs: Purchase Order/ Work order/ Contract clearly highlighting the scope of work and value of the contract / order.
Completion/ Go-Live Certificate/Project Acceptance Certificate issued & signed by the competent authority of the client entity on the entity’s letterhead.</td><td colspan="5"></td></tr>
<tr><td>18</td><td>Submission of Valid certifications:
• Certifications: Copies of Valid certifications
Bidder shall ensure that the</td><td colspan="5"></td></tr>
</table>

	Certifications continue to remain valid throughout project period.	
19	Blacklisting/ Bankruptcy: An Affidavit on stamp paper signed by the Authorized Signatory of the Bidder and consortium members.	
20	Establishment of software development center in Bengaluru	

It is hereby confirmed that I/We are entitled to act on behalf of our company/ corporation/ firm/ organization and empowered to sign this document as well as such other documents, which may be required in this connection.

(Signature) (In the capacity of)
(Name)

Duly authorized to sign the Tender Response for and on behalf of:

(Name and Address of Company) Seal/Stamp of bidder

Witness Signature:
Witness Name:
Witness Address:

CERTIFICATE AS TO AUTHORISED SIGNATORIES
I, _____, the Company Secretary of _____ certify that _____who signed the above Bid is authorized to do so and bind the company by authority of its board/ governing body. A copy of the authorization document is provided herewith.

Date:
Signature:
(Company Seal) (Name)

PQ FORM 3: Bidder Profile

(To be provided on the Company's Letter head)

Sl. No.	Particulars	Description/ Details	Reference Documents	Page No.
1	Name of PrimeBidder			
2	Contact Details			
	Address			
	Telephone No.			
	Fax			
	Email			
	Website			
3	Incorporation Details			
	Incorporation Number			
	Date of Incorporation			
	GSTIN			
	PAN			
4	Name of Authorized Signatory		Power of Attorney, duly authorizing the person signing the bid documents to sign on behalf of the bidder and thereby binding the bidder	
	Position			
	Telephone			
	Fax			
	Mobile			
	Email			
5	Number & Address of Offices			
6	*Bank Account Details of Bidder* Account No: IFSC Code: Branch & Bank Name: Beneficiary Name:			
Full Name, Designation and Signature of the Authorized Representative:				

PQ FORM 4: Consortium Members Details

(To be provided on the Company's Letter head)

Consortium Members	Legal Entity name and registered office address	Percentage Participation	Key contact person and contact details	Country of Incorporation or Domicile
Prime Bidder			Name	
			Designation	
			Email	
			Contact number	
Consortium Member 1			Name	
			Designation	
			Email	
			Contact number	
			GSTIN	
			PAN	

PQ FORM 5: Previous Implementation Experiences Details

(To be provided on the Company's Letter head)

Work Experience	
Assignment name:	Location:
Name of Client:	Address:
Name of the Legal Entity in whose name the contract is:	
Duration of assignment (months):	Start date (Month/year): Completion date (Month/year):
*Approx. value of the overall contract (In INR):	*Approx. value of the services provided by your firm under the contract (in INR):
Name of associated organizations, if any:	Role of Consortium member (if any):
Brief description of the Project:	
Detailed Scope of services, coverage, and relevance to this project: (Please do specify various project components in detail)	
Copy of Go-live/ acceptance/ completion certificate from the client attached?	YES / NO
Does the Work order/purchase order/ copy of completion certificate/ letter of award specify the Value of the Contract? (In case of value not specified, please attach self-declaration by the authorized signatory of the firm stating the value of the contract and the project scope of services.)	YES / NO
Note: Work Experience to be supported by valid supporting documents such as Work Order, Work Completion / Performance Certificate.	

PQ FORM 6: Average Annual Turnover and Net worth

(To be provided by the Chartered Accountant)

Bidder's Name: [Full Name]:	
CONSORTIUM Member's Name: [Full Name]	

ANNUAL TURNOVER	
Financial Year	**Amount(INR)**
2019-20	
2020-21	
2021-22	
2022-23	
2023-24	
Average Annual Turnover	

POSITIVE NET WORTH	
Financial Year	**Amount(INR)**
2021-22	
2022-23	
2023-24	

Name of Chartered Accountant (CA)	
Seal and Signature of CA	
Membership Number of CA	
Firm Registration No.	
UDI no.	

Notes:

i. Separate Proforma shall be used for each member in case of Consortium.
ii. Attach copies of the Audited Financial Statements for 5 years as specified in the above table, certified by Chartered Accountant or company Auditor.
iii. All such documents reflect the financial data of the tenderer or member in case of Consortium, and not that of sister or parent company.
iv. Historic financial statements must be complete, including all notes to the financial statements.
v. Foreign applicants, in whose country calendar year is also the financial year, may submit all relevant data for the last 5 years i.e., 2020, 2021, 2022, 2023 and 2024.
vi. The financial data in above prescribed format shall be certified by Chartered Accountant / Company Auditor in original under his signature, stamp & membership number, Firm Registration Number & UDIN.

PQ FORM 7: Undertaking on Patent Rights

(To be provided on the Company's Letter head)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Undertaking on Patent Rights

Sir,

1. I/We as Bidder do hereby undertake that none of the deliverables being provided by us is infringing on any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence.
2. I/We also confirm that there shall be no infringement of any patent or intellectual and industrial property rights as per the applicable laws of relevant jurisdictions having requisite competence, in respect of the systems, solutions or any part thereof to be deliverable by us. We shall indemnify BMTC against all cost/claims/legal claims/liabilities arising from third party claim in this regard at any time on account of the infringement or unauthorized use of patent or intellectual and industrial property rights of any such parties, whether such claims arise in respect of manufacture or use.
3. If it is found that it does infringe on patent rights, I/We absolve BMTC of any legal action.

Yours faithfully,

Authorized Signatory
Designation
Date:

PQ FORM 8: Non-Malicious Code Certificate

(To be provided on the Company's Letter head)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Non-Malicious Code Certificate

Sir,
I/We hereby certify that the software being offered/ developed as part of the contract does not and will not contain any kind of malicious code that would activate procedures to:

a. Inhibit the desired and the designed function of the equipment / solution.
b. Cause damage to the user or his equipment/ solution during the operational exploitation of the equipment / solution.
c. Tap information regarding network, network users and information stored on the network that is classified and / or relating to National Security, thereby contravening Official Secrets Act 1923.
d. Collect, compile, or use citizen data for purposed other than to strictly provide services as per the requirements of the RFP.

There are / will be no Trojans, Viruses, Worms, Spywares, Phishing, or any malicious software on the system and in the software offered or software that will be developed.
Without prejudice to any other rights and remedies available to BMTC, we are liable under Information Technology Act, 2000 and 2008 and Indian Penal Code 1860 in case of physical damage, loss of information and those relating to copyright and Intellectual Property rights (IPRs), caused due to activation of any such malicious code in offered / developed software.

Yours faithfully,

Authorised Signatory
Date:

PQ FORM 9: Proforma of Declaration

(To be furnished on a Government Stamp Paper of Rs. 20/-)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Proforma of Declaration
Ref: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

Dear Sir,

1. We hereby declare that the rates quoted by us is lowest and we have not quoted / supplied to any other STU's / Organizations during the preceding one year at less than the rates offered by us in the subject tender.

   Or

   We have Provided solutions _____ to our following customers during the preceding One-year at less than the rates offered to you in the subject tender, and the details are as follows:
   a. Name of the STU / Organization to whom the Solution was provided:
   b. Rates offered to them:
   c. The reasons for variation:
   d. Quantity offered / supplied:

2. We declare that we have not been blacklisted/bankruptcy /barred from participating in the tender (s) by any of the Government Organization/Public Sector undertaking for breach of contract during last three years. Further, we have not been declared ineligible for corrupt and fraudulent practices issued by any of the State Government/ Government of India/Union Territory. The he assessment of the previous project performance shall also be considered.
3. We hereby declare that all the particulars furnished by us in this tender are true to the best of our knowledge and we accept that, if any stage, the information furnished is found to be incorrect of false, we are liable for disqualification from this tender and also are liable for any penal action that may arise due to the above.

Additionally, the performance of our previous projects can be verified for satisfactory results.

4. We agree to abide by the payment clause as mentioned in the RFP. We are aware that the security deposit will be refunded/returned as per the terms of RFP.
5. The rates quoted in the e-procurement portal are final and we agree to hold the same till the completion of the deliverables as per the contract.
6. We agree to furnish Security Deposit as per terms and conditions within time mentioned in the tender. We agree to extend the validity of the bank guarantee/ security deposit unconditionally in case needed as per the requirement of BMTC.
7. We undertake to fulfill all the statutory requirements.
8. We are aware of the fact that, any conditional offer/ counter conditions (Technical or Financial bid) shall lead to rejection of our tender.
9. We undertake to abide by all the terms and conditions of tender, in case of violation of any of the Terms and conditions of the tender, we understand that we are liable to be barred by BMTC for participating in future two tenders.
10. We comply to SLA parameters mentioned in the tender.
11. We declare that we have or shall establish a software development office in Bengaluru.

Signature of Authorized Signatory (with official seal)
Date:
Name:
Designation:
Address:
Telephone:
E-mail Id:

PQ FORM 10: Compliance Certificate regarding restrictions on public procurements from bidders of countries which shares a Land Border with India

(To be furnished on a Government Stamp Paper of Rs. 100/-)

Date:
dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Declaration for Compliance on Land Border sharing
Ref: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

Dear Sir,
We have read the clauses regarding restrictions on procurement from a bidder of a country which shares a land border with India (GoI Letter No. F.No. 6/18/2019 - PPD dtd: 23.07.2020 Order (Public Procurement No. 1 and 2) dated 23.07.2020 & Order (Public Procurement No. 3) dated 24.07.2020, Orders of GoK vide No. FD 455 Exp-12 2020 Bengaluru Dated: 25.08.2020, GoI OM vide No. F.No. 18/37/2020-PPD dtd: 08.02.2021 and GoK circular vide No. FD 455 Exp-12/2020 Bengaluru Dtd: 10.03.2021 and FD 455 Exp-12/2020 Bengaluru Dtd: 29.03.2021.

i. I/ We certify that, we are not from such a country which shares a land border with India and we are eligible to be considered.

Or

I/ We declare that, we are from such a country or countries which shares a land border with India and we have been registered with the Competent Authority and certify that, we fulfill all requirements in this regard and are eligible to be considered. A copy of the valid registration by the Competent Authority is enclosed along with this declaration for Evidence.

ii. We declare that, we will not sub-contract any work to a contractor from such country or countries which shares a land border with India unless such contractor is registered with the Competent Authority in case the work order is released on us. We fulfill all requirements in this regard and is eligible to be considered. (A copy of the valid registration issued by the Competent Authority to be enclosed if applicable)

iii. We declare that, we will not provide services directly/ indirectly from the vendors from the countries sharing land border with India unless such vendor is registered with the Competent Authority.

iv. We aware of the fact that, if the information provided by us in this certificate/ declaration is found to be false at any stage, this would be a ground for immediate termination of order/ contract/ LoI and further legal action against us in accordance with law.

v. We are aware that, such registration with Competent Authority should be valid at the time of submission of bids and at the time of acceptance of bids.

Signature of Authorized Signatory (with official seal)
Date:
Name:
Designation:
Address:
Telephone:
E-mail Id:

PQ FORM 11: Additional Format

(To be provided on the Company's Letter head)

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Additional format

Ref: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

The Bidders should fill the details as mentioned in the format and the same should be uploaded in the e-procurement portal.

Sl No	Component	Qty	HSN Code	GST % As applicable	Other taxes (if any)
1	Monthly charges for Cloud and Application Maintenance including connectivity charges per ETM.	11000			
2	Monthly rental charges per ETM including SIM charges, servicing etc. (without SAM)				
3	Monthly rental charges per ETM including SIM charges, servicing etc. (with SAM)				
4	SAM Charges (One time cost per ETM to be quoted)				

Note: The price should not be mentioned in this form. The price should be quoted in the e-Procurement portal which is inclusive of GST and other taxes if any.

Thanking you,
Yours faithfully

(Signature of the authorized representative of the Bidder)
Name:
Designation:
Seal:
Date:

Place:

PQ FORM 12: Declaration on not being black listed/ defaulted.

(To be submitted on the Company's Letter head)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Declaration on not being black listed/ defaulted.
Ref: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

Dear Sir,

We confirm that our company is not blacklisted/ defaulted for any fraudulent actions by any State/ Central Government institution or any Public Sector Organization.
It is hereby confirmed that I/We are entitled to act on behalf of our Company/ Corporation/ Firm/ Organization and empowered to sign this document as well as such other documents, which may be required in this connection.

Signature

Name & Designation

For and on behalf of
(Name of Applicant or Bidder)
Company Seal:

Place:
Date:

PQ FORM 13: Component Rates.

(To be submitted on the Company's Letter head)
(The bidders should fill the details as mentioned in the format and the same should be submitted to the office of the Controller of Stores & Purchases, BMTC in a sealed cover on or before the due date for submission of bids)

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Component Rates.
Ref: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis.

Dear Sir,

We would like to offer the below mentioned rates for the major components of ETMs, for replacement, in case of damage of any ETM/ major component or for loss of ETMs, due to mishandling by BMTC Staff. We confirm that the price mentioned will be valid for the entire contract period (4+1 Years) from the date of declaration of Go-Live.

Sl	Component	UoM	GST Rate in %	Basic Rate in Rs. Ps.	End Rate in Rs. Ps.
1	ETM	Nos			
2	Motherboard	Nos			
3	Battery	Nos			
4	Printer	Nos			
5	Display	Nos			
6	Camera	Nos			
7	Charger	Nos			
8	Printer roller	Nos			
9	Charger Port	Nos			
10	Lower back cover	Nos			
11	Printer cover	Nos			
12	Adapter cable	Nos			

Thanking you,
Yours faithfully

(Signature of the authorized representative of the Bidder)
Name:
Designation:
Seal:
Date:
Place:

PQ FORM 14: Manufacturers' Authorization Form

(To be submitted on the Company's Letter head)

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Manufacturers' Authorization Form Additional format
Ref: Tender No. BMTC/2024-25/, Dtd..

Dear Sir,

We who are established and reputable manufacturers of ……
(name and description of goods offered) having factories at …… (address of factory) do hereby authorize M/s …… (Name and address of Agent) to submit a tender, and sign the contract with you for the goods manufactured by us against the above Tender.
No company or firm or individual other than M/s…… are authorized to tender, and conclude the contract for the above goods manufactured by us, against this specific Tender.
We hereby extend our full guarantee and warranty as per the RFP for the goods and services offered for supply by the above firm against this Tender.

Yours faithfully,

(Name)
(Name of Manufacturers)

Note: This letter of authority should be on the letter head of the manufacturer and should be signed by a person competent and having the power of attorney to legally bind the manufacturer. It should be included by the Tenderer in its tender.

* Modify this format suitably in case where manufacturer's warranty and guarantee are not applicable for the items for which bids are invited

TQ FORM 1: CV for the Proposed Key Professionals

CURRICULUM VITAE (CV)

Position Title:	
Name of Expert:	
Date of Birth:	
Country of	

Education:

Name of University	Name of Institution	Degree obtained	Date of obtainment

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held,types of activities performed and location of the assignment, and contact information of previous clients and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	Employing organization and your title/position.	Country	Summary of activities performed

Membership in Professional Associations and Publications:

Language Skills (indicate only languages in which you can work):

Adequacy for the Assignment:

Detailed Tasks Assigned on Bidder'sTeam of Experts:	Reference to Prior Work/Assignments that Best Illustrates Capability to

Expert's contact information: (e-mail ....., phone.....)

Certification:

I,theundersigned,certifythattothebest ofmyknowledgeandbelief,thisCVcorrectlydescribesmyself,myqualifications,andmy experience,andI amavailable,asandwhennecessary, to undertake the assignment in case of an award. I understand that any misstatementormisrepresentationdescribedhereinmayleadtomydisqualificationor dismissalbytheClient, and/or sanctions by the Bank.

		{day/month/ year}
Name of Resource	Signature	Date

		{day/month/ year}
Name of authorized Representative of the Bidder (The same who signs the Proposal)	Signature	Date

TQ FORM 2: Undertaking on Compliance and Sizing of Infrastructure

(To be provided on the Company's Letter head)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Undertaking on Compliance and Sizing of Infrastructure

Sir,
As the Implementation Agency, I/We hereby confirm that we have appropriately proposed and sized the hardware, cloud and software (including licenses) based on the requirements specified by BMTC in its RFP document. Our proposal aligns with the Service Level requirements and AS-IS specifications provided for various components. We assure BMTC that the sizing covers all the functionality outlined in the RFP document.

Yours faithfully,

Authorized Signatory
Designation
Date:

TQ FORM 3: Compliance to Technical and Functional Requirements.

(To be provided on the Company's Letter head)
(The bidder should provide compliance to the requirement specifications (both technical andfunctional) specified in the Annexures of this RFP. The same should bereproduced here, and compliance against each requirement line item should be marked)

Date: dd/mm/yyyy

To,
Controller of Stores & Purchases
Office of Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Sub: Compliance to Technical and Functional Requirements.
Sir,
As the Implementation Agency, I/We hereby confirm that the technical specification of the ETMs and the functionality is in line with the requirements specified in the RFP document.

(A) ETM Hardware Specification

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
1	**Processor** 64 bit processor with minimum 1 GHz speed.	
2	**OS** Preferably Android 10 or higher.	
3	**Memory** a) Minimum 1 GB RAM. b) Minimum 8 GB inbuilt flash memory and c) SD/ Micro SD/ TF Card interface to support minimum 16 GB. d) Flash memory should be capable of retaining data without corruption during the entire contract period with BMTC (data sheet supporting this feature to be enclosed). e) Flash memory should be utilized for storing 10000 tickets and 100 to 1000 routes with 100	

	to 250 stages.	
4	**Real Time Clock** In built real time clock with calendar.	
5	**Display** a) Capacitive touchscreen with minimum of 1024X768 pixel resolution color display. b) Minimum of 5” rugged LCD touch screen display with Virtual Keypad **OR** Minimum 4” rugged LCD touch screen display along with Physical Keypad c) Display should be with anti-glare tough glass and screen guard. d) Capable of displaying graphical images / Machine Readable Optical Images/ Icons/ Any Response Code etc. e) Should support multi language display (English and Kannada). f) Should have good readability even during day/night with proper sunlight/ backlight. g) Display should be dust-proof. h) Display should be scratch and tamper resistant. i) Display should work from outer cover/ pouch with transparent screen guard. j) Automatic adjustment of backlight brightness to optimize battery usage.	
6	**Keypad** a) Virtual Keypad / Touch Screen with Soft Keys. b) Optional physical keypad with minimum keys required for ticketing including numerals, functional and navigational keys. c) Physical keypad should be detachable and replaceable. d) Keys shall be in different colors differentiating numerals, functions etc., in case the machine has physical keypad.	
7	**Printer** a) Ultra-fast 2-inch inbuilt thermal printer with minimum 60 mm/sec speed. b) Paper Width 57 mm. c) Paper roll cage of minimum 40 mm diameter. d) Printer shall support thermal paper of 50-60 GSM.	

	e) Easy paper roll loading mechanism, without using paper-feed-key. f) Semi-transparent/ Transparent paper roll cover. g) PAPER OVER sensor. h) PAPER COVER OPEN sensor. i) Printer should support printing text in Kannada and English and also images, symbols, numerals etc..	
8	**Battery** a) Min. 24 Wh or higher, capable of operating minimum of 16 hours in operation mode per single charge (minimum 16 Hours of battery backup) which includes 72 hours of sleep/ power saver mode. b) Li-ion/ Li-polymer internal battery with protection against explosion while handling as per the Safety Standards and Regulations. c) Battery should be compliant with IEC 62133, ISO 12405 & all other Battery Cell Safety Standards and Regulations to be followed as and when revised. d) Quick rechargeable in-built battery charger with over-charge/ over-voltage / over-current protection capable to charge fully within 3 to 4 hours. e) CHARGING and BATTERY FULL indications display in machine. f) Minimum of 300 full recharge LIFE-CYCLE for BATTERY. g) Capable to print at least 3000 tickets per single charge. h) ETM shall have ability to send the battery rating/ percentage to the backend application. i) ETM shall have provision to safely and easily replace the battery. j) Optimization for low battery use.	
9	**Power and Battery Control** a) Soft touch power On/Off control for easy operation b) Soft touch lock/unlock control for easy operation and optimization of battery. c) Soft touch control for increase/decrease	

	brightness or same to be programmed. d) Automatic and intelligent power shutdown/on/off for extended operation e) Low Battery indication with audio beeps and automatic shutdown.	
10	**Chargers** a) AC Charger working from 100V to 280V, 50-60 Hz. b) USB Type-C charging facility. c) Chargers should have capacity to charge the battery fully within 3-4 hours. d) Chargers should be as per the requirement of battery capacity and comply with all Safety Standards and Regulations.	
11	**Weight and Design** a) Ergonomically designed for easy holding b) ETM should weigh less than 650gm with battery and thermal paper roll. c) Should be a tamper proof design for fraud prevention d) Should be a rugged and compact design, water and dust resistance with IP54 certification.	
12	**Environment Compliance** a) Operational Temperature: 10°C to 50°C b) Operational humidity: 40% to 80% c) Product should comply with latest guidelines/ standards applicable in India such as CE/ RoHS/ BIS etc.	
13	**Communication Interface** a) RS232C Serial Port at 115K baud rate (Optional). b) Minimum USB 3.0 Type-C Port with 5 Gbps speed or higher. c) Minimum 4.0 version Bluetooth. d) In-built Wi-Fi transmitter/ receiver. e) 5G LTE, fallback 2G.	
14	**GSM / GPRS Specification** a) GSM/GPRS on 850/900/1800/1900 MHz. b) GPRS module to suit Indian Frequency band. c) Communication Protocols – TCP/IP, HTTP, FTP. d) In-built tamper proof SIM Card Holder accommodating one SIM. e) GSM signal strength indication in display unit.	

15	**RFID and SMART CARD Reader/ Writer Specification** a) Inbuilt contactless smart card reader with industry standard minimum frequency. b) IEC/ ISO 14443A, Type A & B, MiFare compliant. c) Read/ Write Capability. d) Reading range at least 50 mm. e) EMV and NCMC Compliant. f) e-purse/ wallet transaction support.	
16	**Certifications** a) EMV Level 1 certified. Level 2 and 3 will be required at the time of implementation. b) MasterCard, Visa, Rupay, TQM, Paypass, Paywave, Amex Expresspay, Discover D-Pass. c) Devices should be compliant with prevailing National Common Mobility Card specification issued by NPCI i.e. NPCI's qSparc2.0 (NCMC). d) PCI PTS 5.X (or higher) Certification. e) Support for ISO 8583 protocol.	
17	**QR Reader/ Validator Specification** a) 5 MP auto focus rear camera to read Bar code and QR codes. b) Image Sensor (Pixels) - 640 x 400 pixels c) Decode Range 1" to 10" for 20 mil QR Code d) Light Source LED 350-770 nm	
18	**Security Features** a) Minimum of 2 SAM Slots compliant to ISO Standards 7816. b) Cryptographic methods for card data security. c) Triple DES for Key Management with UKPT (Unique Key per Transaction). d) Should support encryption standard including 3DES and AES for smart card reading/ writing. e) Data transfer with cryptographic methods to provide constant confidentiality, data integrity and authenticity.	
19	**Other Requirements** a) The supplier/ OEM shall provide ANDROID ETM SDK for the ANDROID ETM firmware. b) Change of any hardware part of ETM should not lead to the change in machine serial number and it should be stored internally in the	

	encrypted form apart from being physically embossed on the outer case of ETMs. c) Each ETM must be provided with pouch having logo of BMTC. d) Charger should have logo of BMTC. e) Device cover shall be water and dust resistance. f) Each ETM shall be provided with pouch in good condition and charger. g) The specification of the paper roll should be provided by the selected bidder. h) BMTC will supply the paper rolls to depots as per the requirements. i) Pouches to be replaced every year in all the ETMs. j) Batteries in all the ETMs should be replaced every two years. However, if the battery is not functioning to the expected level before due date for replacement, the selected bidder need to replace the same immediately.	

(B) ETM Functional Specification

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
1	**ON –**To switch On the ETM	
2	**OFF** – To switch Off the ETM	
3	**ENTER -** To accept the operation.	
4	**ESC -** To cancel the operation.	
5	**ROUTE** 1. SELECT ROUTE - Should enable conductor to select the route for operation. This should display all the routes loaded and any one route to be selected for the operation by the user. 2. PRINT SELECTED ROUTE - This should print the Route Card of the current route, i.e. Route No, Route Type, Stage No, Stage Name, KM, Fare etc. 3. PRINT LOADED ROUTES - This should print details such as Route No, From and Destination and Total Stops of all the routes loaded in the	

	ETM. 4. SELECT BUS SERVICE TYPE – Option to select the service type.	
6	**STAGE** This feature should close the current stage and update to the next stage with confirmations.	
	TICKET - To specify number of adults and child tickets	
	LUG - To specify the number of luggage units.	
	REPEAT - To print the ticket with same number of passengers and to the same destination as previous ticket.	
	PASS – List of pass to be displayed. To enter pass details. The conductor should be able to select the type of pass like STUDENT, GENERAL PASS, DAILY PASS, FREEDOM FIGHTER, LABOUR PASS, BLIND PASS etc., document number, destination and print/ store the pass ticket. In case, BMTC issues QR code based/ RFID cards to any of the passes, on selecting the pass type, camera to be activated for reading QR Code; after validating QR/ RFID card, card number needs to be captured, user should be able to select the destination and print/ store the ticket, in case the card is valid. Otherwise appropriate alert message to be shown on the display.	
	CON TKT- To issue concession based tickets. A single or group ticket to passengers travelling to different destinations based on requirement. 1. POLICE WARRANT - When this feature is selected, user should be able to enter number of seats, police warrant number, select the destination and print the ticket. 2. JOURNALIST TICKET – When this option is selected, user should be able to enter journalist coupon number, select the destination and print the ticket. 3. SENIOR CITIZEN - When this option is selected, user should be able to enter senior citizen id number, select the destination and print the ticket. 4. WOMAN TICKET- When this option is selected, user should be able to enter number of woman/ girl passengers, select destination	

	and print the woman ticket. 5. RETIRED OFFICER TICKET- When this option is selected, user should be able to enter card number, select destination and issue tickets to retired officers of the Corporation. In case, BMTC issues QR code based/ RFID cards to any of the concessional tickets, on selecting the above options, camera to be activated for reading QR Code; after validating QR/ RFID card, card number needs to be captured, user should be able to select the destination and print the ticket, in case the card is valid. Otherwise appropriate alert message to be shown on the display.	
	Fn –Function Feature This feature should have the following options 1. PAYMENTS – This feature is required for the following options a) TOLLGATE (BRIDGE FEE) - When this option is selected, user should be able to enter the amount of bridge fee paid b) BUS STAND FEE - When this option is selected, user should be able to enter the amount of bus stand fee paid 2. DIESEL ENTRIES - This feature should be able to input the quantity of diesel, dead kilometre of the schedule, deviation kilometres and cancelled kilometres. **3.** BUS START TIME - This feature is used to set the departure time of each trip when the bus leaves the bus stand. If failed to do so, the first ticket issued in the trip shall be taken as BUS START TIME	
	REPORTS This feature should provide the following options for taking different types of reports 1. TRIP SHEET - This feature should provide the options for taking trip-wise details for (i) All trips, (ii) Current trip, (iii) Selected trips. 2. STATUS REPORT - This option should provide the details of passengers in the bus at that time.	

	3. TICKET DETAILS - It should have the following options a) All tickets – This feature should print the details of tickets issued in (i) All trips, (ii) Current trip, (iii) Selected trips. b) All tickets with date and time - This feature should print the details of tickets issued in (i) All trips, (ii) Current trip, (iii) Selected trips with date and time of issue. 4. COLLECTION REPORT - This feature shall provide the collection details up to that time in (i) All trips, (ii) Current trip, (iii) Selected trips. 5. EPKM/KMPL REPORT - This feature should provide the EPKM and KMPL report of the schedule 6. STAGE-WISE REPORT - This feature should print the stage wise details of boarding and alighting passengers for (i) All trips, (ii) Current trip, (iii) Selected trips. 7. TRIP EXTRACT – This should include trip-wise passenger counts. (Counts of Full Ticket, Half Ticket, Luggage, Pass Passenger, Concession Ticket Passengers with all kind of bifurcation). 8. REGULARITY REPORT - This feature should print the trip wise departure details of the bus. 9. BREAK DOWN REPORT (Vehicle Exchange Report) – This report should include route, stage, date and time of breakdown, and all ticket details (ticket no, from and to stage, type of ticket and fare etc along with summary). 10. SUMMARY REPORT – Statement showing list of all reports and number of times each report had been printed in route. This should be enabled only after closing of schedule.	
	INSP (Inspection) Provision for entry of en-route bus checking information / offence code in to the ETMs while on scheduled duty. This Feature should provide the following options. 1. INSPECTOR LOGIN – This feature should enable to enter username and password to login the Line Checking module. 2. INSPECTION REPORT - This feature should provide the details of passengers in the bus	

	including the passengers alighting at that stage. 3. PRINT SELECTED ROUTE – This should print the Route Card, i.e. Route No, Route Type, Stage No, Stage Name, KM, Fare etc 4. STAGEWISE REPORT - This feature should print the stage wise details of alighting passengers for (a) All trips, (b) Current trip, (c) Selected trips. 5. STAGE CLOSE REPORT - This feature should print the close time for each stage for each trip. 6. SUMMARY REPORT – Statement showing list of all reports and number of times each report had been printed in route. 7. INSPECTOR TICKET - This feature is used to take un-punched tickets by the inspector to book the case on the passengers travelling without ticket. Also option should be given to book the case (Whether Outstanding, Red Mark Case or Ordinary Case) and case sheet should be printed. 8. BOOK CASE - This feature should give the following options to book the case and print case sheet (a) OUT STANDING (b) RED MARK CASE (c) ORDINARY CASE (d) CHECKED OK		
Provision for Operator Login, Inspector Login, Supervisor Login to operate the machine.			
Pressing the required stage number and pressing enter should print single ticket. While doing operation above and any other ticket issue operation, the stage number, stage full name, no. of tickets (Full and Half), total fare to be displayed. Using Scroll button the stage can be increased or decreased by the conductor. Related display to be updated.			
	Main Menu Screen	**Route**	Print Route Details
			Print Stage Details
			Trip Selection
			Trip Cancel (Reason:- Accident, Road Block, Break down, others)
			Trip Close
			Duty End
			Vehicle Exchange Report
			Trip Details (conductor no, driver no, Schedule no, vehicle no ,Form IV)

		Reports	Trip Wise Revenue Details
			Current Trip Details
			All Trip Status Report
			Trip Wise Ticket Details
		Line Checking	LC Login using username-password
			LC Status Report (Current Trip)&(Previous Trip)
			Penalty Ticket (NINC, NIAC, RE-ISSUE)
			Defaults (Jumping, Not Account, Identity Card Lapsed, Kept Blank, Cash Excess, Cash Shortage, Concerned Possession Ticket, Unconcerned Possession Ticket)etc
			Book Case (Ordinary, RMC, ORMC, Checked OK)
			Inspection Report
		ViewLast Ticket	
		Special pass	
		Toll Pass	
		Head Clean	
		Pass Validation	
	Ticket issuance	Boarding and Alighting Info	
		From Stage (option for closing current stage)	
		To Stage (Enter stage Number) (Repeat ticket option)	
		Toll Pass	
		Digital Pass Scanner	
		Trip number	
		Schedule	
		Route name	
		Trip name	
	Ticket Print Page	Source	
		Destination (Option for editing between stops)	
		Validate Pass, Daily Pass	
		Passenger Type	Adult (option for selecting No.of.passengers)
			Child (option for selecting No.of.passengers)
			Senior (option for selecting No.of.passengers)
			Luggage (option for No.of.units)
		Women ticket (Women,Girl) (option for selecting No.of.passengers)	
		Payment mode (UPI,CASH)	
		Daily Pass	Please Select ID Card
			(Aadhar Card,Pancard,DrivingLicense,PassportNumber, VoterID,Others)
			Enter Last four digits

			Male / Female
			UPI / CASH
	Duty End	Login using password	
		Trip Wise Revenue Details	
		All Trip Status report	
		Ticket Details	
		Current Trip Details	
		WIFI	default admin password
		AUDIT	Uploading data to cloud

(C) ETM Software Requirement (Bus Ticketing)

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
i.	**Bus Ticketing Application**	
1	Minimum key operation for printing journey tickets and reports.	
2	Single key operation for Fare stage selection and reports.	
3	Memory capability to download and store 100 to 1000 routes with 100 to 250 stages with 20-character name description in English and 35-character name description in Kannada, 6-digit rate for 3 seasons, stages, sub-stages, kilometers, In-between stages etc.	
4	Provision to upload firmware, master data, configuration parameters, way bill data from the centralized web based fare collection softwareand download complete ticket details to the same.	
5	Provision for a) Minimum 30 flexi fares for each route b) Minimum 40 programmable different types of passes c) Minimum 30 programmable different types of bus service types d) Entering slab rates for different types of cess. e) Provision to add different types of cess like ARF, bridge fee, insurance fee, infrastructure fee, GST, miscellaneous fee etc. in tickets. If BMTC decides to include any new cess, the ETM software should readily accommodate. f) Printing informative and alert messages on the	

	tickets in English or Kannada or Both. g) Provision for printing advertisements on tickets. h) Printing tickets in English or Kannada or Both. i) Rounding off of the fare as per the business logics provided by BMTC. j) Dynamic fare k) Provision for Servicewise or route wise applicability of Concession Ticket/ Pass/ Cess etc. l) Printing of Tickets and reports in bilingual – Kannada and English	
6	Provision to issue a) Full charge and half charge Tickets, Concession Tickets, Luggage Tickets, Passes, Inspector tickets, police warrant tickets, journalist tickets, freedom fighter tickets, senior citizen tickets, zero valued tickets etc. b) Various concession tickets with percentage reduction in passenger fare and to print remarks in the ticket where ticket is printed / issued with no cash transaction. c) Group tickets with all combination of tickets – if needed with concessions/discounts also as per BMTC requirements. d) Full charge and Half charge Concession Tickets of specified percentage of discounts, printed with both discounted and original fare.	
7	Pressing the required stage number and pressing enter should print single ticket. While doing any ticket issue operation, the stage number, stage full name, number of seats and total fare to be displayed. The stage can be increased or decreased by the conductor using Scroll button. Related display to be updated.	
8	Provision to capture a) Tollgate fee payments b) Bus stand fee payment c) Inspection details with inspector ID and remarks d) Quantity of diesel filled in home depot and outside depots e) Dead, Deviation and Cancelled kilometer	

	f) Breakdown details. g) Reservation ticket details with start stage and end stage h) Trip start time, Schedule Start/End Date and Time. i) Depot Arrival / Departure timings of the bus (through ETM on schedule). j) Non travel details i.e. passengers reserved their seats but not travelled k) Pass Travelers Details l) Photos using camera during accidents etc.Same to be transferred to Central Control Station directly.	
9	Provision to generate a) Status Report showing ticket no, origin and destination stage, number of full and half seats, luggage units and ticket amount of all tickets currently valid b) Trip Sheet showing route details, service type, number of passengers, luggage units, passes, collections, deductions, different types of cess collected, starting & ending ticket numbers, trip EPKM etc. for each trip c) Collection Report which shows net amount to be paid for the day along with total number of passengers, luggage units, passes, collections, deductions etc with all kind of bifurcations. d) Ticket details report showing ticket no, date and time of issue, origin and destination stage, number of full and half seats, luggage units and ticket amount of all tickets. e) Inspection Report showing inspector ID, time of inspection, place of check, case type, remarks, details of passengers in the bus including the passengers alighting at that stage. f) Stage-wise Report showing number of passengers boarded and alighted at each stage. g) Regularity Report showing details regarding departure time of each trip h) Stage Close Report showing close time for	

	each stage for each trip i) EPKM and KMPL report showing KMs covered and EPKM (Earnings per KM) in each trip, total KMs, average EPKM and KMPL (Kilometers per liter) for the day. j) Breakdown Report showing the route, stage, date and time of breakdown etc k) Bus Departure and Arrival ticket for regularity check. l) All such requirements of BMTC from time to time.	
10	Provision for entering of en-route bus checking information / offence code in to the ETMs while on scheduled duty and capturing of the checking place/stage. Provision to issue penalty tickets as per BMTC business requirements, in case of default.	
11	Cumulative collection, deduction, net amount and number of times the machine reset should be printed in collection report.	
12	Each ticket should have running serial number which should not repeat throughout the life of the machine. Likewise each report should have running serial number which should not repeat throughout the life of the machine.	
13	The vendor shall ensure that the firmware provided to BMTC should be unique and it should not work on other vendors' machine.	
14	Unique ID key should be stored in database so that during data transfer between ETM and server, application should first validate the authenticity of the ETM.	
15	Alert messages should be displayed during Waybill Audit, when there is suspected data manipulation other than set procedures.	
16	All tickets stored in the ETM shall be collected and sent to the cloud online immediately after a ticket is raised. In case of no connectivity, data should be transferred once the connection is available.	
17	If data cannot be fully transferred to the PC from ETM due to any hardware defect or malfunctioning of ETM software, the vendor shall rectify the ETM and return to depot without tampering data, and	

	arrange to get the data downloaded to the depot database.	
18	Security measures to be provided for the ETM against data manipulation outside or in any other depot as per the latest industry standards and requirements of BMTC.	
19	ETM should print only those tickets or reports which the BMTC authorizes the duty conductor to print.	
20	Printing of other reports should be as per the roles and privileges specified by BMTC.	
21	A report to be generated and printed with the accountability of the Reports printed i.e. total number of the times the Reports available in the ETMs printed during the duty by the conductor. For example, for a given conductor, the ticketing software should generate how many times he has printed status report, trip sheet etc. on one duty.	
22	ETMs shall be integrated with AVLS servers as per the requirements of BMTC in coordination with AVLS solution providers.	
23	Different types of security features should be provided in ETMs as per the requirements of BMTC.	
24	The vendor shall develop and modify forms/ reports suggested by BMTC as and when required at free of cost during the entire contract period.	
25	Any other firmware modification suggested by BMTC should be complied with short notice at free of cost during the contract period.	
26	Camera in the ETM to be active only during QR ticket validation.	
27	ETMs to be restricted with installation/ updation of any application at user end. The applications to be installed/updated in the ETMs with prior permission from BMTC.	
28	Version control for ETM firmware and application is the responsibility of the solution provider.	
ii.	**Terminal Management Software (Online Application for remote management of ETMs)**	
1	Remote Terminal Management Software shall be	

	developed for Terminal Monitoring and Remote Administration.	
2	Capable of upgrading firmware, application, configuration parameters, master data etc. directly from cloud.	
3	Capable of assigning depot wise serial number to each machine comprising of depot code (4 characters) and depot serial number (4 characters)	
4	Capable of installing permitted Applications.	
5	Provision to change the vehicle and driver number in case of substitution.	
6	Application should be compatible with all standard browsers and operating systems.	
iii. Contactless Smart Card Software		
1	**CONCESSIONAL PASSES** a) ETM shall validate various kinds of passes like Student Pass, General Pass, Senior Citizen Card, Journalist Pass etc. issued by BMTC and store the record and print ticket only on request. b) Passes issued with STAGE-FROM and STAGE-TO for validity shall be validated against the current selected ROUTE in the ETM. c) Passes issued for a particular day or period shall be validated against the current date in the ETM. d) Conductor shall be able to renew specified passes through ETM. e) Valid passes are indicated with a short audio beep. f) Invalid passes are to be indicated by long error audio beep.	
2	**PREPAID CARDS** a) Passengers carrying PREPAID CARD shall be able to redeem the STORED VALUE, against the fare by showing the card to ETM. b) Data of the PREPAID transactions shall be transferred to cloud c) The data of the PREPAID transactions shall be collated and reconciled by the RECONCILLATION SOFTWARE. d) Re-conciliation reports indicating details of	

	cards and redemption shall be produced. e) Prepaid cards issued should be re-chargeable through mobile wallets / net banking / IMPS / UPI / USSD, even by conductor in the bus by paying cash by validating the card through ETMs.	
3	**NCMC Cards and any other Open Loop Cards** Validating any Open loop card for facilitating quicker and more efficient payment methods.	
iv.	**Contactless Payment Solution**	
	a) ETMs should be EMV Certified and the associated software shall read any Debit/ Credit/ Prepaid Contactless Cards and validate the card to receive the payment. b) QR for UPI payment has to be mapped and integrated to the BMTC designated bank account. Provision to be made for generating dynamic QR for the passenger to make payment through UPI. Once payment is confirmed, the ticket should be generated. For both options (a) and (b), the transactions need to be secured and industry standard compliant. The successful bidder shall develop and deploy necessary and user friendly MIS reports and dashboard functionalities as per the requirements of BMTC. The successful bidder shall deploy fool proof mechanism in settlement of accounts arising out of transactions stated at above (a) and (b) in coordination with all stakeholders.	
v.	**Contactless Validation**	
	QR/ OCR (Optical Character Recognition) Facility – Reading, validating and processing. a) QR/ Ticket validation b) Smart Card Pass Validation. c) Wallet Card validation. d) All Open loop and Closed loop card payment validation. e) Provision for ETM to behave as ticket validator	

(D) Centralized Web based Fare collection software

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
1	Centralized Web based Fare collection software Deployment of Central AFCS on cloud along with key software modules mentioned below. These shall be web based and mobile compatible. Some of these functionalities, which will be mentioned during System study/development stage. • Route Management, • Fare Management System. ▪ End to end solution. ▪ Rate Master, Toll Fee & Other Fee ▪ Fare generation: Stage Based, Flexi ▪ Modification ▪ Date based multiple fare chart. • Schedule Management ▪ Trip Management • Crew, Vehicle, ETM, etc., Allocation to Schedules/Casual Contract. • Ticket/Pass Management System. ▪ End to end system shall be provided. ▪ Issuance, Receipt and Return to Conductors/Stock/Pass ▪ counter/TC. ▪ Pre printed passenger Tickets, Luggage Tickets and Passes ▪ Inventory such as Central stock, Depot stock, bag stock, bag to bag transfer. ▪ Toll ticket & Toll Pass Ticket and Special Pass Ticket Management ▪ Recording of all tickets issued, validated. ▪ Miscellaneous such as penalty tickets, toll tickets ▪ Reports & Dashboards. • Ticket & Pass and other Revenue Auditing System: ▪ Waybill Abstract generation & printing. ▪ Application to load waybill to perform the duty and download data to perform audit after the completion of the duty. Should provide Audit application to audit the	

	ticket/pass and other revenue generated in the ETM. ▪ Restriction of auditing by authorized Machines. • Cash Management ▪ All account department related interfaces such as cash receipt, sundry refunds, voucher, receipt etc. ▪ Restriction of cash receiving by authorized Machines(MAC ID preferable). • Revenue Management. ▪ Real-time and end of period reports for reporting and reconciliation of tickets and revenue. ▪ Revenue related reports such ACC-66, Daily Revenue memo, G-1 statement, ST-1, ST-2. • Passenger Management ▪ Analysis of No. of passengers travelled Category wise, Age wise, Gender wise, Route wise, Trip wise, Pass wise, Denomination wise, Stage wise, Bus stop wise, Time wise, etc ▪ Analysis of No. of Trips travelled Category wise, Age wise, Gender wise, Route wise, Trip wise, Pass wise, Denomination wise, Stage wise, Bus stop wise, Time wise etc., • Operation Management System(Configuration and calculation of Incentive/Bata and other Allowances, CPKM, EPKM, Attendance and Time sheet generation, etc) sales through POS machines in the Bus TTMCs/Airport bus stands etc. • Smartcard Management System, • Pass Management System, • Digital ticket/Pass Management, • Reconciliation Management System, • FCS Inventories and Device health management system. • ETM, etc ▪ Paper roll stock management and auto re-order generation. • Line Checking Management.	

	• AFCS project Grievance Management • In case of NCMC integration, AFCS application is required to cater necessary card acceptance related activities from hardware and software side. • Application shall allow to block and unblock ETMs online in case of missing/theft/stolen • Helpdesk tool to log issues • SMMS application Minimum key operation for printing journey tickets and reports.	

(E) Meity empanelled Cloud services

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
	• To set up and maintain cloud-based hosting to host the Platform and necessary software applications. • The cloud data Centre must be physically located in India. • The cloud infrastructure should comply with MeitY guidelines. • The infrastructure provisioned by the bidder must be scalable and shall allow add/reduce cloud resources to host the application. • The bidder would be responsible for enterprise level support or equivalent for software licenses, covering updates, security patches, issue resolution at software level, bug fixing etc. • The Staging Infrastructure on the Cloud will be responsibility of the bidder. • Cloud service should comply with SLA. • The bidder shall be responsible for ensuring security of overall solution and infrastructure from any threats and vulnerabilities. The bidder shall address ongoing needs of security management including, but not limited to, monitoring of various devices / tools such as firewall, intrusion prevention/ detection, content filtering and blocking,	

	virus protection, event logging & correlation and vulnerability protection through implementation of proper patches and rules. • The SI should provide 24*7 Helpdesk support • Sharing Root Cause Analysis report for any downtime or unavailability of the cloud • Cloud should be on high availability mode ensuring full time operations	

(F)ETM Software Requirement (Other Applications)

#	Particulars	Compliance (Yes / No). Any deviations from requirements to be mentioned
1	Bus Station Software Module	
2	Dashboard	
3	Mobile App	

Further, we confirm BMTC that we will ensure providing all the functionalities outlined in the technical, functional and software requirements mentioned in this RFP document.

Yours faithfully,

Authorized Signatory
Designation
Date:

ANNEXURE – I: ETM Hardware and Functional Specifications

(A) ETM Hardware Specification

#	Particulars
1	**Processor** 64 bit processor with minimum 1 GHz speed.
2	**OS** Preferably Android 10 or higher.
3	**Memory** a) Minimum 1 GB RAM. b) Minimum 8 GB inbuilt flash memory and c) SD/ Micro SD/ TF Card interface to support minimum 16 GB. d) Flash memory should be capable of retaining data without corruption during the entire contract period with BMTC (data sheet supporting this feature to be enclosed). e) Flash memory should be utilized for storing 10000 tickets and 100 to 1000 routes with 100 to 250 stages.
4	**Real Time Clock** In built real time clock with calendar.
5	**Display** a) Capacitive touchscreen with minimum of 1024X768 pixel resolution color display. b) Minimum of 5” rugged LCD touch screen display with Virtual Keypad **OR** Minimum 4” rugged LCD touch screen display along with Physical Keypad c) Display should be with anti-glare tough glass and screen guard. d) Capable of displaying graphical images / Machine Readable Optical Images/ Icons/ Any Response Code etc. e) Should support multi language display (English and Kannada). f) Should have good readability even during day/night with proper sunlight/ backlight. g) Display should be dust-proof. h) Display should be scratch and tamper resistant. i) Display should work from outer cover/ pouch with transparent screen guard. j) Automatic adjustment of backlight brightness to optimize battery usage.
6	**Keypad** a) Virtual Keypad / Touch Screen with Soft Keys. b) Optional physical keypad with minimum keys required for ticketing including numerals, functional and navigational keys. c) Physical keypad should be detachable and replaceable. d) Keys shall be in different colors differentiating numerals, functions etc., in case the machine has physical keypad.
7	**Printer** a) Ultra-fast 2-inch inbuilt thermal printer with minimum 60 mm/sec

	speed. b) Paper Width 57 mm. c) Paper roll cage of minimum 40 mm diameter. d) Printer shall support thermal paper of 50-60 GSM. e) Easy paper roll loading mechanism, without using paper-feed-key. f) Semi-transparent/ Transparent paper roll cover. g) PAPER OVER sensor. h) PAPER COVER OPEN sensor. i) Printer should support printing text in Kannada and English and also images, symbols, numerals etc..
8	**Battery** a) Min. 24 Wh or higher, capable of operating minimum of 16 hours in operation mode per single charge (minimum 16 Hours of battery backup) which includes 72 hours of sleep/ power saver mode. b) Li-ion/ Li-polymer internal battery with protection against explosion while handling as per the Safety Standards and Regulations. c) Battery should be compliant with IEC 62133, ISO 12405 & all other Battery Cell Safety Standards and Regulations to be followed as and when revised. d) Quick rechargeable in-built battery charger with over-charge/ over-voltage / over-current protection capable to charge fully within 3 to 4 hours. e) CHARGING and BATTERY FULL indications display in machine. f) Minimum of 300 full recharge LIFE-CYCLE for BATTERY. g) Capable to print at least 3000 tickets per single charge. h) ETM shall have ability to send the battery rating/ percentage to the backend application. i) ETM shall have provision to safely and easily replace the battery. j) Optimization for low battery use.
9	**Power and Battery Control** a) Soft touch power On/Off control for easy operation b) Soft touch lock/unlock control for easy operation and optimization of battery. c) Soft touch control for increase/decrease brightness or same to be programmed. d) Automatic and intelligent power shutdown/on/off for extended operation e) Low Battery indication with audio beeps and automatic shutdown.
10	**Chargers** a) AC Charger working from 100V to 280V, 50-60 Hz. b) USB Type-C charging facility. c) Chargers should have capacity to charge the battery fully within 3-4 hours. d) Chargers should be as per the requirement of battery capacity and comply with all Safety Standards and Regulations.
11	**Weight and Design** a) Ergonomically designed for easy holding

	b) ETM should weigh less than 650gm with battery and thermal paper roll. c) Should be a tamper proof design for fraud prevention d) Should be a rugged and compact design, water and dust resistance with IP54 certification.
12	**Environment Compliance** a) Operational Temperature: 10°C to 50°C b) Operational humidity: 40% to 80% c) Product should comply with latest guidelines/ standards applicable in India such as CE/ RoHS/ BIS etc.
13	**Communication Interface** a) RS232C Serial Port at 115K baud rate (Optional). b) Minimum USB 3.0 Type-C Port with 5 Gbps speed or higher. c) Minimum 4.0 version Bluetooth. d) In-built Wi-Fi transmitter/ receiver. e) 5G LTE, fallback 2G.
14	**GSM / GPRS Specification** a) GSM/GPRS on 850/900/1800/1900 MHz. b) GPRS module to suit Indian Frequency band. c) Communication Protocols – TCP/IP, HTTP, FTP. d) In-built tamper proof SIM Card Holder accommodating one SIM. e) GSM signal strength indication in display unit.
15	**RFID and SMART CARD Reader/ Writer Specification** a) Inbuilt contactless smart card reader with industry standard minimum frequency. b) IEC/ ISO 14443A, Type A & B, MiFare compliant. c) Read/ Write Capability. d) Reading range at least 50 mm. e) EMV and NCMC Compliant. f) e-purse/ wallet transaction support.
16	**Certifications** a) EMV Level 1 certified. Level 2 and 3 will be required at the time of implementation. b) MasterCard, Visa, Rupay, TQM, Paypass, Paywave, Amex Expresspay, Discover D-Pass. c) Devices should be compliant with prevailing National Common Mobility Card specification issued by NPCI i.e. NPCI's qSparc2.0 (NCMC). d) PCI PTS 5.X (or higher) Certification. e) Support for ISO 8583 protocol.
17	**QR Reader/ Validator Specification** a) 5 MP auto focus rear camera to read Bar code and QR codes. b) Image Sensor (Pixels) - 640 x 400 pixels c) Decode Range 1" to 10" for 20 mil QR Code d) Light Source LED 350-770 nm
18	**Security Features** a) Minimum of 2 SAM Slots compliant to ISO Standards 7816.

	b) Cryptographic methods for card data security. c) Triple DES for Key Management with UKPT (Unique Key per Transaction). d) Should support encryption standard including 3DES and AES for smart card reading/ writing. e) Data transfer with cryptographic methods to provide constant confidentiality, data integrity and authenticity.
19	**Other Requirements** a) The supplier/ OEM shall provide ANDROID ETM SDK for the ANDROID ETM firmware. b) Change of any hardware part of ETM should not lead to the change in machine serial number and it should be stored internally in the encrypted form apart from being physically embossed on the outer case of ETMs. c) Each ETM must be provided with pouch having logo of BMTC. d) Charger should have logo of BMTC. e) Device cover shall be water and dust resistance. f) Each ETM shall be provided with pouch in good condition and charger. g) The specification of the paper roll should be provided by the selected bidder. h) BMTC will supply the paper rolls to depots as per the requirements. k) Pouches to be replaced every year in all the ETMs. l) Batteries in all the ETMs should be replaced every two years. However, if the battery is not functioning to the expected level before due date for replacement, the selected bidder need to replace the same immediately.

(B) ETM Functional Specification
(DETAILED FEATURES FOR ETM SOFTWARE MENU)

ON –To switch On the ETM
OFF – To switch Off the ETM
ENTER - To accept the operation.
ESC - To cancel the operation.
ROUTE 1. SELECT ROUTE - Should enable conductor to select the route for operation. This should display all the routes loaded and any one route to be selected for the operation by the user. 2. PRINT SELECTED ROUTE - This should print the Route Card of the current route, i.e. Route No, Route Type, Stage No, Stage Name, KM, Fare etc. 3. PRINT LOADED ROUTES - This should print details such as Route No, From and Destination and Total Stops of all the routes loaded in the ETM. 4. SELECT BUS SERVICE TYPE – Option to select the service type.
STAGE This feature should close the current stage and update to the next stage

with confirmations.

TICKET - To specify number of adults and child tickets

LUG - To specify the number of luggage units.

REPEAT - To print the ticket with same number of passengers and to the same destination as previous ticket.

PASS – List of pass to be displayed**.** To enter pass details. The conductor should be able to select the type of pass like STUDENT, GENERAL PASS, DAILY PASS, FREEDOM FIGHTER, LABOUR PASS, BLIND PASS etc., document number, destination and print/ store the pass ticket.
In case, BMTC issues QR code based/ RFID cards to any of the passes, on selecting the pass type, camera to be activated for reading QR Code; after validating QR/ RFID card, card number needs to be captured, user should be able to select the destination and print/ store the ticket, in case the card is valid. Otherwise appropriate alert message to be shown on the display.

CON TKT- To issue concession based tickets. A single or group ticket to passengers traveling to different destinations based on requirement.

1. POLICE WARRANT - When this feature is selected, user should be able to enter number of seats, police warrant number,select the destination and print the ticket.
2. JOURNALIST TICKET – When this option is selected, user should be able to enter journalist coupon number,select the destination and print the ticket.
3. SENIOR CITIZEN - When this option is selected, user should be able to enter senior citizen id number,select the destination and print the ticket.
4. WOMAN TICKET- When this option is selected, user should be able to enter number of woman/ girl passengers, select destination and print the woman ticket.
5. RETIRED OFFICER TICKET- When this option is selected, user should be able to enter card number, select destination andissue tickets to retired officers of the Corporation.

In case, BMTC issues QR code based/ RFID cards to any of the concessional tickets, on selecting the above options, camera to be activated for reading QR Code; after validating QR/ RFID card, card number needs to be captured, user should be able to select the destination and print the ticket, in case the card is valid. Otherwise appropriate alert message to be shown on the display.

Fn –Function Feature

This feature should have the following options

1. PAYMENTS – This feature us required for the following options
   c) TOLLGATE (BRIDGE FEE) - When this option is selected, user should be able to enter the amount of bridge fee paid

d) BUS STAND FEE - When this option is selected, user should be able to enter the amount of bus stand fee paid

2. DIESEL ENTRIES - This feature should be able to input the quantity of diesel, dead kilometre of the schedule, deviation kilometres and cancelled kilometres.
3. BUS START TIME - This feature is used to set the departure time of each trip when the bus leaves the bus stand. If failed to do so, the first ticket issued in the trip shall be taken as BUS START TIME

REPORT

This feature should provide the following options for taking different types of reports

1. TRIP SHEET - It feature should provide the options for taking trip-wise details for (i) All trips, (ii) Current trip, (iii) Selected trips.
2. STATUS REPORT - This option should provide the details of passengers in the bus at that time.
3. TICKET DETAILS - It should have the following options
   a) All tickets – This feature should print the details of tickets issued in (i) All trips, (ii) Current trip, (iii) Selected trips.
   b) All tickets with date and time - This feature should print the details of tickets issued in (i) All trips, (ii) Current trip, (iii) Selected trips with date and time of issue.
4. COLLECTION REPORT - This feature shall provide the collection details up to that time in (i) All trips, (ii) Current trip, (iii) Selected trips.
5. EPKM/KMPL REPORT - It feature should provide the EPKM and KMPL report of the schedule
6. STAGE-WISE REPORT - This feature should print the stage wise details of boarding and alighting passengers for (i) All trips, (ii) Current trip, (iii) Selected trips.
7. TRIP EXTRACT – This should include trip-wise passenger counts. (Counts of Full Ticket, Half Ticket, Luggage, Pass Passenger, Concession Ticket Passengers with all kind of bifurcation).
8. REGULARITY REPORT - This feature should print the trip wise departure details of the bus.
9. BREAK DOWN REPORT (Vehicle Exchange Report) – This report should include route, stage, date and time of breakdown, and all ticket details (ticket no, from and to stage, type of ticket and fare etc along with summary).
10. SUMMARY REPORT – Statement showing list of all reports and number of times each report had been printed in route. This should be enabled only after closing of schedule.

INSP (Inspection)

Provision for entry of en-route bus checking information / offence code in to the ETMs while on scheduled duty. This Feature should provide the following options.

<table>
<tr><td colspan="3">1. INSPECTOR LOGIN – This feature should enable to enter username and password to login the Line Checking module.
2. INSPECTION REPORT - This feature should provide the details of passengers in the bus including the passengers alighting at that stage.
3. PRINT SELECTED ROUTE – This should print the Route Card, i.e. Route No, Route Type, Stage No, Stage Name, KM, Fare etc
4. STAGEWISE REPORT - This feature should print the stage wise details of alighting passengers for (a) All trips, (b) Current trip, (c) Selected trips.
5. STAGE CLOSE REPORT - This feature should print the close time for each stage for each trip.
6. SUMMARY REPORT – Statement showing list of all reports and number of times each report had been printed in route.
7. INSPECTOR TICKET - This feature is used to take un-punched tickets by the inspector to book the case on the passengers travelling without ticket. Also option should be given to book the case (Whether Outstanding, Red Mark Case or Ordinary Case) and case sheet should be printed.
8. BOOK CASE - It feature should give the following options to book the case and print case sheet (a) OUT STANDING (b) RED MARK CASE (c) ORDINARY CASE (d) CHECKED OK</td></tr>
<tr><td colspan="3">Provision for Operator Login, Inspector Login, Supervisor Login to operate the machine.</td></tr>
<tr><td colspan="3">Pressing the required stage number and pressing enter should print single ticket.
While doing operation above and any other ticket issue operation, the stage number, stage full name, no of tickets (Full and Half), total fare to be displayed. Using Scroll button the stage can be increased or decreased by the conductor. Related display to be updated.</td></tr>
<tr><td rowspan="13">Main Menu Screen</td><td rowspan="8">Route</td><td>Print Route Details</td></tr>
<tr><td>Print Stage Details</td></tr>
<tr><td>Trip Selection</td></tr>
<tr><td>Trip Cancel (Reason:- Accident, Road Block, Break down, others)</td></tr>
<tr><td>Trip Close</td></tr>
<tr><td>Duty End</td></tr>
<tr><td>Vehicle Exchange Report</td></tr>
<tr><td>Trip Details (conductor no, driver no, Schedule no, vehicle no ,Form IV)</td></tr>
<tr><td rowspan="4">Reports</td><td>Trip Wise Revenue Details</td></tr>
<tr><td>Current Trip Details</td></tr>
<tr><td>All Trip Status Report</td></tr>
<tr><td>Trip Wise Ticket Details</td></tr>
<tr><td rowspan="2">Line Checkin</td><td>LC Login using username-password</td></tr>
<tr><td>LC Status Report (Current Trip)&(Previous Trip)</td></tr>
</table>

	g	Penalty Ticket (NINC, NIAC, RE-ISSUE)
		Defaults (Jumping, Not Account, Identity Card Lapsed, Kept Blank, Cash Excess,Cash Shortage, Concerned Possession Ticket, Unconcerned Possession Ticket)etc
		Book Case (Ordinary, RMC, ORMC, Checked OK)
		Inspection Report
	ViewLast Ticket	
	Special pass	
	Toll Pass	
	Head Clean	
	Pass Validation	
Ticket issuance	Boarding and Alighting Info	
	From Stage (option for closing current stage)	
	To Stage (Enter stage Number) (Repeat ticket option)	
	Toll Pass	
	Digital Pass Scanner	
	Trip number	
	Schedule	
	Route name	
	Trip name	
Ticket Print Page	Source	
	Destination (Option for editing between stops)	
	Validate Pass,Daily Pass	
	Passenger Type	Adult (option for selecting No.of.passengers)
		Child (option for selecting No.of.passengers)
		Senior (option for selecting No.of.passengers)
		Luggage (option for No.of.units)
	Women ticket (Woman,Girl) (option for selecting No.of.passengers)	
	Payment mode (UPI,CASH)	
	Daily Pass	Please Select ID Card
		(Aadhar Card,Pancard,DrivingLicense,PassportNumber,VoterID,Others)
		Enter Last four digits
		Male / Female
		UPI / CASH
Duty End	Login using password	
	Trip Wise Revenue Details	
	All Trip Status report	
	Ticket Details	
	Current Trip Details	
	WIFI	default admin password
	AUDIT	Uploading data to server cloud

ANNEXURE – II: Software Requirements

a) ETM Software Requirement (Bus Ticketing)

i.	Bus Ticketing Application
1	Minimum key operation for printing journey tickets and reports.
2	Single key operation for Fare stage selection and reports.
3	Memory capability to download and store 100 to 1000 routes with 100 to 250 stages with 20-character name description in English and 35-character name description in Kannada, 6-digit rate for 3 seasons, stages, sub-stages, kilometers, In-between stages etc.
4	Provision to upload firmware, master data, configuration parameters, way bill data from the centralized web based fare collection software and download complete ticket details to the same.
5	Provision for a) Minimum 30 flexi fares for each route b) Minimum 40 programmable different types of passes c) Minimum 30 programmable different types of bus service types d) Entering slab rates for different types of cess. e) Provision to add different types of cess like ARF, bridge fee, insurance fee, infrastructure fee, GST, miscellaneous fee etc. in tickets. If BMTC decides to include any new cess, the ETM software should readily accommodate. f) Printing informative and alert messages on the tickets in English or Kannada or Both. g) Provision for printing advertisements on tickets. h) Printing tickets in English or Kannada or Both. i) Rounding off of the fare as per the business logics provided by BMTC. j) Dynamic fare k) Provision for Service wise or route wise applicability of Concession Ticket/ Pass/ Cess etc. l) Printing of Tickets and reports in bilingual – Kannada and English
6	Provision to issue a) Full charge and half charge Tickets, Zero fare Tickets, Concession Tickets, Luggage Tickets, Passes, Inspector tickets, police warrant tickets, journalist tickets, freedom fighter tickets, senior citizen tickets, zero valued tickets etc. b) Various concession tickets with percentage reduction in passenger fare and to print remarks in the ticket where ticket is printed / issued with no cash transaction. c) Group tickets with all combination of tickets – if needed with concessions / discounts also as per BMTC requirements. d) Full charge and Half charge Concession Tickets of specified percentage of discounts, printed with both discounted and original

	fare.
7	Pressing the required stage number and pressing enter should print single ticket. While doing any ticket issue operation, the stage number, stage full name, number of seats and total fare to be displayed. The stage can be increased or decreased by the conductor using Scroll button. Related display to be updated.
8	Provision to capture a) Tollgate fee payments b) Bus stand fee payment c) Inspection details with inspector ID and remarks d) Quantity of diesel filled in home depot and outside depots e) Dead, Deviation and Cancelled kilometer f) Breakdown details. g) Reservation ticket details with start stage and end stage h) Trip start time, Schedule Start/End Date and Time. i) Depot Arrival / Departure timings of the bus (through ETM on schedule). j) Pass Travelers Details k) Photos using camera during accidents etc. Same to be transferred to concerned department of Central Offices directly.
9	Provision to generate a) Status Report showing ticket no, origin and destination stage, number of full and half seats, luggage units and ticket amount of all tickets currently valid b) Trip Sheet showing route details, service type, number of passengers, luggage units, passes, collections, deductions, different types of cess collected, starting & ending ticket numbers, trip EPKM etc. for each trip c) Collection Report which shows net amount to be paid for the day along with total number of passengers, luggage units, passes, collections, deductions etc with all kind of bifurcations. d) Ticket details report showing ticket no, date and time of issue, origin and destination stage, number of full and half seats, luggage units and ticket amount of all tickets. e) Inspection Report showing inspector ID, time of inspection, place of check, stage number, case type, remarks, details of passengers in the bus including the passengers alighting at that stage. f) Stage-wise Report showing number of passengers boarded and alighted at each stage. g) Regularity Report showing details regarding departure time of each trip h) Stage Close Report showing close time for each stage for each trip

	i) EPKM and KMPL report showing KMs covered and EPKM (Earnings per KM) in each trip, total KMs, average EPKM and KMPL (Kilometers per liter) for the day. j) Breakdown Report showing the route, stage, date and time of breakdown etc k) Bus Departure and Arrival ticket for regularity check. l) All such requirements of BMTC from time to time.
10	Provision for entering of en-route bus checking information / offence code in to the ETMs while on scheduled duty and capturing of the checking place/stage. Provision to issue penalty tickets as per BMTC business requirements, in case of default.
11	Cumulative collection, deduction, net amount and number of times the machine reset should be printed in collection report.
12	Each ticket should have running serial number which should not repeat throughout the life of the machine. Likewise each report should have running serial number which should not repeat throughout the life of the machine.
13	The vendor shall ensure that the firmware provided to BMTC should be unique and it should not work on other vendors' machine.
14	Unique ID key should be stored in database so that during data transfer between ETM and server, application should first validate the authenticity of the ETM.
15	Alert messages should be displayed during Waybill Audit, when there is suspected data manipulation other than set procedures.
16	All tickets stored in the ETM shall be collected and sent to the cloud online immediately after a ticket is raised. In case of no connectivity, data should be transferred once the connection is available.
17	If data cannot be fully transferred to the PC from ETM due to any hardware defect or malfunctioning of ETM software, the vendor shall rectify the ETM and return to depot without tampering data, and arrange to get the data downloaded to the centralized web based Fare collection system.
18	Security measures to be provided for the ETM against data manipulation outside or in any other depot as per the latest industry standards and requirements of BMTC.
19	ETM should print only those tickets or reports which the BMTC authorizes the duty conductor to print.
20	Printing of other reports should be as per the roles and privileges specified by BMTC.
21	A report to be generated and printed with the accountability of the Reports printed i.e. total number of the times the Reports available in the ETMs printed during the duty by the conductor. For example, for a given conductor, the ticketing software should generate how many

	times he has printed status report, trip sheet etc. on one duty.
22	ETMs shall be integrated with AVLS servers as per the requirements of BMTC in coordination with AVLS solution providers.
23	Different types of security features should be provided in ETMs as per the requirements of BMTC.
24	The vendor shall develop and modify forms/reports suggested by BMTC as and when required at free of cost during the entire contract period.
25	Any other firmware modification suggested by BMTC should be complied with short notice at free of cost during the contract period.
26	Camera in the ETM to be active only during QR ticket validation.
27	ETMs to be restricted with installation/ updation of any application at user end. The applications to be installed/updated in the ETMs with prior permission and sign off from BMTC.
28	Version control for ETM firmware and application is the responsibility of the solution provider.
ii.	**Terminal Management Software (Online Application for remote management of ETMs)**
1	Remote Terminal Management Software shall be developed for Terminal Monitoring and Remote Administration.
2	Capable of upgrading firmware, application, configuration parameters, master data etc. directly from cloud.
3	Capable of assigning depot wise serial number to each machine comprising of depot code (4 characters) and depot serial number (4 characters)
4	Capable of installing permitted Applications.
5	Provision to change the vehicle and driver number in case of substitution.
6	Application should be compatible with all standard browsers and operating systems.
iii.	**Contactless Smart Card Software**
1	**CONCESSIONAL PASSES** a) ETM shall validate various kinds of passes like Student Pass, General Pass, Senior Citizen Card, Journalist Pass etc. issued by BMTC and store the record and print ticket only on request. b) Passes issued with STAGE-FROM and STAGE-TO for validity shall be validated against the current selected ROUTE in the ETM. c) Passes issued for a particular day or period shall be validated against the current date in the ETM. d) Conductor shall be able to renew specified passes through ETM. e) Valid passes are indicated with a short audio beep.

	f) Invalid passes are to be indicated by long error audio beep.
2	**PREPAID CARDS** a) Passengers carrying PREPAID CARD shall be able to redeem the STORED VALUE, against the fare by showing the card to ETM. b) Data of the PREPAID transactions shall be transferred to CLOUD c) The data of the PREPAID transactions shall be collated and reconciled by the RECONCILIATION SOFTWARE. d) Re-conciliation reports indicating details of cards and redemption shall be produced. e) Prepaid cards issued should be re-chargeable through mobile wallets / net banking / IMPS / UPI / USSD even by conductor in the bus by paying cash by validating the card through ETMs.
3	**NCMC Cards and any other Open Loop Cards** Validating any Open loop card for facilitating quicker and more efficient payment methods.
iv.	**Contactless Payment Solution**
	a) ETMs should be EMV Certified and the associated software shall read any Debit/ Credit/ Prepaid Contactless Cards and validate the card to receive the payment. b) QR for UPI payment has to be mapped and integrated to the BMTC designated bank account. Provision to be made for generating dynamic QR for the passenger to make payment through UPI. Once payment is confirmed, the ticket should be generated. For both options (a) and (b), the transactions need to be secured and industry standard compliant. The successful bidder shall develop and deploy necessary and user friendly MIS reports and dashboard functionalities as per the requirements of BMTC. The successful bidder shall deploy fool proof mechanism in settlement of accounts arising out of transactions stated at above (a) and (b) in coordination with all stakeholders.
v.	**Contactless Validation**
	QR/ OCR (Optical Character Recognition) Facility – Reading, validating and processing. a) QR/ Ticket validation b) Smart Card Pass Validation. c) Wallet Card validation. d) All Open loop and Closed loop card payment validation. e) Provision for ETM to behave as ticket validator

(D) Centralized Web based Fare collection software

#	Particulars
1	Centralized Web based Fare collection software

	Deployment of Central AFCS on cloud along with key software modules mentioned below. These shall be web based and mobile compatible. Some of these functionalities, which will be mentioned during System study/development stage. • Route Management, • Fare Management System. ▪ End to end solution. ▪ Rate Master, Toll Fee & Other Fee ▪ Fare generation: Stage Based, Flexi ▪ Modification ▪ Date based multiple fare chart. • Schedule Management ▪ Trip Management • Crew, Vehicle, ETM, etc., Allocation to Schedules/Casual Contract. • Ticket/Pass Management System. ▪ End to end system shall be provided. ▪ Issuance, Receipt and Return to Conductors/Stock/Pass ▪ counter/TC. ▪ Pre printed passenger Tickets, Luggage Tickets and Passes ▪ inventory such as Central stock, Depot stock, bag stock, bag ▪ to bag transfer. ▪ Toll ticket & Toll Pass Ticket and Special Pass Ticket ▪ Management ▪ Recording of all tickets issued, validated. ▪ Miscellaneous such as penalty tickets, toll tickets ▪ Reports & Dashboards. • Ticket & Pass and other Revenue Auditing System: ▪ Waybill Abstract generation & printing. ▪ Application to load waybill to perform the duty and download data to perform audit after the completion of the duty. Should provide Audit application to audit the ticket/pass and other revenue generated in the ETM. ▪ Restriction of auditing by authorized Machines. • Cash Management ▪ All account department related interfaces such as cash receipt, sundry refunds, voucher, receipt etc. ▪ Restriction of cash receiving by authorized Machines(MAC ID preferable). • Revenue Management. ▪ Real-time and end of period reports for reporting and reconciliation of tickets and revenue. ▪ Revenue related reports such ACC-66, Daily Revenue memo,

	G-1 statement, ST-1, ST-2. • Passenger Management ▪ Analysis of No. of passengers traveled Category wise, Age wise, Gender wise, Route wise, Trip wise, Pass wise, Denomination wise, Stage wise, Bus stop wise, Timewise,etc ▪ Analysis of No. of Trips traveled Category wise, Age wise, Gender wise, Route wise, Trip wise, Pass wise, Denomination wise, Stagewise,Busstopwise,Timewiseetc., • Operation Management System(Configuration and calculation of Incentive/Bata and other Allowances, CPKM, EPKM, Attendance and Time sheet generation,etc) sales through POS machines in the Bus TTMCs/Airport bus stands etc. • Smartcard Management System, • Pass Management System, • Digital ticket/Pass Management, • Reconciliation Management System, • FCS Inventories and Device health management system. • ETM, etc ▪ Paper roll stock management and auto re-order generation. • Line Checking Management. • AFCS project Grievance Management • In case of NCMC integration, AFCS application is required to cater necessary card acceptance related activities from hardware and software side. • Application shall allow to block and unblock ETMs online in case of missing/theft/stolen • Helpdesk tool to log issues • SMMS application Minimum key operation for printing journey tickets and reports.

(E) Meity empanelled Cloud services

#	Particulars
	• To set up and maintain cloud-based hosting to host the Platform and necessary software applications. • The cloud data Centre must be physically located in India. • The cloud infrastructure should comply with MeitY guidelines. • The infrastructure provisioned by the bidder must be scalable and shall allow add/reduce cloud resources to host the application. • The bidder would be responsible for enterprise level support or equivalent for software licenses, covering updates, security patches, issue resolution at software level, bug fixing etc. • The Staging Infrastructure on the Cloud will be responsibility of

	the bidder. • Cloud service should comply with SLA. • The bidder shall be responsible for ensuring security of overall solution and infrastructure from any threats and vulnerabilities. The bidder shall address ongoing needs of security management including, but not limited to, monitoring of various devices / tools such as firewall, intrusion prevention/ detection, content filtering and blocking, virus protection, event logging & correlation and vulnerability protection through implementation of proper patches and rules. • The SI should provide 24*7 Helpdesk support • Sharing Root Cause Analysis report for any downtime or unavailability of the cloud • Cloud should be on high availability mode ensuring full time operations

b) Bus Station Software Module

There should be separate ETM module to capture Bus Arrival and Departure using ETMs to maintain and track the regularity of the Bus Arrival and Departure at various Bus Stations of BMTC. Hence, there should be provision to capture Schedule No, Bus No, Depot Name to which the vehicle belong to, Conductor number, Driver number, Source and Destination places etc. along with the reports. The selected bidder should suggest and deploy suitable and viable solution to meet BMTC requirements.

c) Dashboard

Three tier (Central Office->Zones->Depots) access based Dashboard with enhanced level of services for enabling larger number of ETMs and users. The successful bidder need to commission centralized ETM Application with back-end data in cloud. The data need to be stored in real time and on cloud at Meityempanelled data centre. The bidder needs to adhere to all the guidelines issued by Competent Authorities from time to time in respect of maintaining data security, integrity, confidentiality and usage by all users. The successful bidder is responsible for providing timely data and reports to BMTC as and when required in prescribed format.

The system should support up to 15,000 concurrent users (Users + ETMs) to connect and shall be extendable as per demand to connect online and avail online services. The Dashboard should provide all the basic functionalities to view and analyse the real time data as well as the historical data. Some of the major functionalities should be enabled in Dashboard are as follows:

- Dashboard should show live ETM status and ETM ticket details.

- Dashboard should show the previous ETM ticket details.
- Dashboard should show the KPI information.
- Dashboard should include three-tier levels of information and reports as per requirement of BMTC.
- Dashboard should be capable of showing the data of minimum of previous 5 years data.
- Dashboard servers should be capable of storing the ticket data of minimum of more than 5 years (per day minimum of 40 lakh passengers)
- Analytical Reports, Analytical Charts, Analytical graphs should be included in the Dashboard.
- There should be reports for analyzing the Dashboard performance, CLOUD Performance etc to track the SLA.
- Provision to view historical ticket data, generate analytical reports/ graphs and comparative statements/ charts etc. dynamically.
- Application should be compatible with all standard browsers and operating systems.

Following is the broad list of reports to be developed and deployed in dashboard:

1. Live Report
2. Ticket Type wise Report
3. Ticket Type wise Summary
4. Pass Passenger Summary
5. Service Type wise Report
6. Schedule Wise EPKM
7. Schedule Arrival Departure
8. MIS Operational Details
9. Conductor wise Earning
10. ETM Activity
11. ETM Report wise Details
12. Deleted Waybill
13. ETMs without Abstract
14. Schedule wise Performance
15. Schedule wise Day wise earning
16. Audited Waybills
17. Un- Audited Waybill
18. Inspection Details
19. Line Check
20. Unchecked Schedules
21. Ticket Number Continuity Report
22. Dashboard Historical Home Page

The above reports are indicative and selected bidder need to develop and deploy any additional reports as per the requirements of the user

departments of BMTC. The bidder also need to customise the reports as per the requirements.

d) Mobile App

A mobile app compatible with Android and iOS to be developed for viewing the Dashboard with all functionalities. The successful bidder shall develop and deploy the mobile app as per the requirements and suggestions of all user departments of BMTC. The mobile app needs to be customized from time to time as per the requirements.

ANNEXURE – III: Performance Bank Guarantee Format

(To be provided on the Company's Letter head)

Date:

To,
Controller of Stores & Purchases,
Bengaluru Metropolitan Transport Corporation,
Central Offices, K H Road,
Shanthi Nagar, BENGALURU-27.

Dear Sir,
Sub: Submission of Performance Bank Guarantee
Ref: RFP for "Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on Rental Basis".

01	GUARANTEE NO	
02	AMOUNT OF THE GUARANTEE	
03	GUARANTEE COVERS FROM	
04	LAST DATE FOR LODGMENT OF CLAIM	

WHEREAS ..... (Name of Technology Solution Provider) hereinafter called "the System Integrator " has undertaken, in pursuance of Contract No..... dated,..... 20... to provide the service ofTechnology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on Rental Basis hereinafter called "the Contract".
AND WHEREAS it has been stipulated by you in the said Contract that the System Integrator shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the System Integrator's performance obligations in accordance with the Contract.
AND WHEREAS we have agreed to give the System Integrator a Guarantee:
THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the System Integrator, up to a total of ..... (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the System Integrator to be in default under the Contract and without cavil or argument, any sum or sums within the limit of ..... (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.
This guarantee is valid until the .....day of.....20.....
Signature and Seal of Guarantors
.....
.....
Date.....
Address:.....

ANNEXURE – IV: Power of Attorney Format

(On Non – judicial stamp paper of Rs.20/- or such equivalent amount and document duly attested by notary public)

Sub: Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on Rental Basis.
Ref: IFT No. .....

*****

Power of Attorney

Know all men by these presents, we ..... (name of the supplier and address of the registered office) do hereby constitute, appoint and authorize Mr. / Ms..... ..... (name and residential address) who is presently employed with us and holding the position of ..... as our true and lawful attorney (hereinafter referred to as the “attorney”), to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Proposal for this tender including signing and submission of the Proposal and all accompanying documents, attending the pre-bid meeting, providing information/responses to BMTC, representing us in all matters before BMTC, if selected, undertaking negotiations with BMTC prior to the execution of the Contract and generally dealing with BMTC in all matters in connection with our Proposal.

We hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ..., THE ABOVE-NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ....., 20.....

For .....
(Signature)
(Name, Title and Address)

Accepted
.....(Signature)
(Name, Title and Address of the Attorney)

ANNEXURE – V: List of existing Depots and Divisions of BMTC

#	Division	Depot	37	South Zone	Depot-2
1	Central Zone	Depot-7	38		Depot-3
2		Depot-13	39		Depot-4
3		Depot-18	40		Depot-20
4		Depot-25	41		Depot-27
5		Depot-28	42		Depot-34
7	East Zone	Depot-6	43		Depot-44
8		Depot-15	44	West Zone	Depot-12
9		Depot-19	45		Depot-16
10		Depot-32	46		Depot-17
11		Depot-38	47		Depot-21
12		Depot-41	48		Depot-33
13		Depot-42	49		Depot-36
14		Depot-51	50		Depot-37
15	North East Zone	Depot-10	51		Depot-49
16		Depot-14			
17		Depot-23			
18		Depot-24			
19		Depot-29			
20		Depot-39			
21		Depot-47			
22		Depot-48			
23	North Zone	Depot-8			
24		Depot-11			
25		Depot-26			
26		Depot-30			
27		Depot-45			
28		Depot-46			
29		Depot-50			
30		Depot-52			
31	North West Zone	Depot-9			
32		Depot-22			
33		Depot-31			
34		Depot-35			
35		Depot-40			
36		Depot-43			

ANNEXURE – VI: Estimated Requirement of ETMs

#	Estimated ETM requirement	11000

Section-4. Terms of Reference

A. Introduction

1. About BMTC

The Bengaluru Metropolitan Transport Corporation(BMTC) is the sole public bus transport service provider in Bengaluru, serving urban, sub-urban and rural areas. BMTC is committed to provide quality, safe, reliable, clean and affordable travel. The testimony of its success lies in increasing passenger trips everyday by a wide range of customer base. To modernize its services for commuter comfort, BMTC strives to strengthen information systems and improve processes through introduction of intelligent technology solution, make capacity enhancement through infrastructure development, user-friendly interchange facilities, fleet upgradation and augmentation, apart from its core activities, which includes fare structuring, route network optimization, planning and monitoring. BMTC reaches far and wide, in every nook and corner of the city, making public transport an attractive travel choice for everyone. BMTC's stronghold in the area of public transport in Bengaluru is a testimony to its adoption of sound Management, HR, Quality and Environmental policies and strong support from the Government of Karnataka and esteemed passengers.

Bengaluru Metropolitan Transport Corporation (BMTC) is a leading passenger road transport organization having a fleet strength over 6,800 buses and operating approx. 60,000 bus trips daily. More than 40 lakhs passengers (on an average) are availing BMTC's services daily. BMTC is currently operating bus services within Karnataka State. Some of the key factors about BMTC are:

Descriptions	Numbers
Central Offices	1
Divisional Offices/Zone	7
Depots	50
Regional Workshops	4
Regional Training Institutes	1
No. of Vehicles	6800
No. of Bus Stations	10 TTMCs, 2 Major and 43 Minor Bus Stands
No. of Employees	28119
Descriptions	**Numbers**

BMTC is the first and leading City Transport in the country to adopt Information Technology in its administrative and operational processes. BMTC has been deploying the IT tools in the best possible measures to

optimize its efficiency and reduce operational cost and at the same time, providing quality services to its customers.

In the year 2006, BMTC has replaced the traditional manual punching of in-bus tickets for passenger with the hand held Electronic Ticketing Machines, first-of-its-kind successfully.

BMTC’s guiding principle has always been to ensure the maximum travel comfort, convenience, safety and familiarity for the commuters. In order to implement user-friendly ticketing machines and ticketing solution with enablement of digital payments during issual of tickets and passes to commuters.

The proposed system shall, at a minimum, consists of in-bus ticketing system and centralized web based fare collection system as per the BMTC business rules with enable seamless card payment/ card validation, UPI payment, QR ticketing, QR validation to manage all kinds of Ticket Transactions and Digital Payments based on the business rules of BMTC. The solution helps the conductors in hassle-free issual of tickets. Additionally, the system shall provide live status of revenue and passenger travel pattern and reconciliation of revenue facility in integration with existing Automatic Vehicle Location System (AVLS), and other IT Projects. And also, ticketing application to be integrated with payment gateway for digital transactions provided by BMTC.

Electronic Ticketing Machines shall provide the facility for collection of revenue, manage the entire functionalities efficiently and enable all the required features bringing more convenience and value-added services to BMTC and commuters with the following key visions:

- Smooth and Seamless Ticketing process with Cash/ Cashless ticketing, based on the business rules of BMTC ticketing with Reports.
- Issue of the tickets/ passes based on type of services.
- Issue of various kinds of Pass and validation of the Pass.
- All kinds of Open loop and Closed loop Card Payment, transactions, validation and Card Recharge etc.
- Dynamic QR based UPI payment
- QR: QR generation for receiving payment and QR validation for QR ticketing.
- Integration with existing Automatic Vehicle Location System (AVLS)
- Dashboard with Live Ticket Data, Revenue and Passenger Details along with MIS Reports
- Mobile APP for viewing the live information of Electronic Ticketing System.

The successful implementation of the project would promote modal shift from personal transport to public transport. It will also ensure in maintaining BMTC’s Technological and Business leadership in the Public Transport sector.

2. BMTC's Existing Ticketing System

BMTC is presently operating with GPRS enabled ETM machines integrated with existing Automatic Vehicle Location System(AVLS) of BMTC that allows two-way data transfer between ETMs and Applications. Additionally, the Dashboard has been provided to track live revenue and ticketing, along with value added information, reports and graphics catering to various inherent features not limited to passenger and business analytics.

Existing Electronic Ticketing System	
Type of System	GPRS based Electronic Ticketing Machine along with sending the live data to Central Server/cloud to display live data on the dashboard.
Key Features	Following features are enabled through centralized web based fare collection system • Booking Conductors for duty • Uploading Routes and Fare details to ETMs. • Uploading waybill and duty details to ETMs. • Issue of tickets during the journey as per BMTC business rules. • Real time transfer of ticket data to Central Server/cloud. • Downloading ticket data to centralized web based software after completion of duty. • Reconciliation/Auditing of ticket data. • Generation of both static and dynamic MIS reports. • Dashboard – live, analytical, informative, historical etc. • Developing ETM Firmware and modifications thereof as per BMTC requirements. • Development, deployment of application software as per BMTC requirements. • Application support and maintenance. • 24 X 7 Technical support along with helpdesk. • Hardware services and support at local locations. • Comprehensive warranty and AMC.

B. Objectives of RFP

The purpose of this RFP is to facilitate the selection of a Technology Solution Provider for supply of Electronic Ticketing Machines along with the Ticketing solution for a period of four years, extendable to another one year as per BMTC requirements on Rental Model:

- The proposed Smart Electronic Ticketing System comprises supply of the Smart Electronic Ticketing Machines, Service and Maintenance of the machines along with ticketing solution.
- User-friendly ticketing machines and ticketing solution, Seamless Card Payment/Card Validation, UPI payment, QR ticketing, QR validation to manage all kinds of Ticket Transactions and Digital Payment based on the business rules of BMTC during issual of tickets and Passes to commuters.
- Dashboard with enhanced level of services for enabling larger number of ETMs and Users concurrently use ETM Central Cloud Server. The system should support up to 15,000 concurrent users and shall be extendable as per demand to avail online services.
- Centralized Database with USB and wireless data transfer modes should be provisioned.
- Setup a scalable infrastructure to support continuous increase in the ridership and concurrent users.
- Provide enhanced payment options through various integrations with payment gateway and wallets.
- Future integrations with existing Automatic Vehicle Location System (AVLS), and Payment Gateway, WhatsApp Chat bot etc.
- Providing the Cloud hosting services for hosting of application meeting the objectives of scalability, reliability, security, flexibility, data integrity and backup/disaster recovery.
- Provide data security and integrations compliant to ISO 27001, particularly with regards to Electronic Ticketing Machine, Ticketing application, system security and all the prevalent Cyber Security standard of the country and same shall be maintained during the entire tenure of the contract.
- Providing hassle-free ticketing solution with latest technologies.
- Integrated, automated, and secured ticketing as per the business rules of BMTC.
- Automate data compilation & report generation to build a reliable MIS.
- Both Cash and Cashless/digital ticketing solution for commuters
- Provide ease and benefits to users by providing user friendly and reliable ETMs and services details/information leading to increase in ridership and adoption of public transport.
- Mobile App for dashboard access.

- Enabling APIs as per BMTC requirements etc.

C. Scope for Work

The scope of work for the bidder includes the (a) Supply, Service and Comprehensive Maintenance of Electronic Ticketing Machines (b) design, development, customization, implementation, operation, and maintenance of the Ticketing Solution as per BMTC Business rules (c) Integration with existing AVLS application and (d) Design & implementation of Dashboard. The bidder must provide smart ETMs and appropriate solution design and sizing for the project according to the scope of work and other terms and conditions of the RFP. The bidder shall provide necessary components/ services required for the project at no additional cost. The bidder is also responsible for providing training to BMTC identified staff & officers, data migration and integrations with Automatic Vehicle Location System (AVLS), payment gatewayetc,. And also provision for viewing live and historical information with respect to ETM ticketing in web portal and mobile (Web based Dashboard and Mobile App).

1. **Design Considerations**

   The Bidder's proposed system architecture shall provide below listed design considerations. The Bidder shall have to ensure the systems are updated at periodic intervals based on any latest guidelines/ communication issued by key stakeholders in order to be compliant with all future guidelines.

   - **Expandability/ Scalability**: System shall be open ended; allows upgrading to take advantage of continued evolution in information and control systems.
   - **Interoperability**: The system design shall be interoperable and accurately interpret information automatically with other sub-systems. Interoperability shall ensure the structure and codification of data is uniform among all sub-systems.
   - **Compatibility**: Non-interference – various devices within the same system must be able to operate without interfering with the operation of other devices.
   - **Open Standards**: Non-proprietary; promotes rapid development of new technologies and acceptance by consumers.
   - **State-of-the-art**: Use of the latest & best available standards to avoid locking in obsolescent technologies.
   - **Availability**: Considering the high sensitivity of the system, it should have high availability and high resilience.

2. **Scope Summary**

   - Supply, Installation, Testing & Commissioning of Electronic

Ticketing Machine with peripherals and pouch to BMTC.

- Supply of 5G data service enabled SIM cards for real time data transfer of revenue data to Central Cloud Server.
- Design, Development & Customization of ETM application as per operational need of BMTC.
- Validate QR code from the ETMs.
- Maintenance & management of spares for individual depots.
- Real-time information & firmware application should be updated Over the Air (OTA).
- Bidder shall have to propose amicable solution for data reconciliation to cater the no-connectivity situation.
- The ETM should be able to issue paper QR code tickets. ETMs should also be able to validate the mobile/ paper QR Code tickets.
- The entire lifecycle of ticket generation to transaction reconciliation shall be done with end to end encryption with security measures.
- The ETM application shall be capable to generate all types of tickets as per business rules of BMTC.

3. Detailed Scope of Work

Supply and maintenance of ETMs and providing in bus ticketing solution of ETMs with all kind of integration on “Rental Model” for a period of four years, extendable to another one year as per BMTC requirements.

a) As-Is study

The successful bidder shall be responsible to carry out the detailed study of existing business practices, solution and other integrated solutions with which Smart ETMs to be integrated in order to finalize Software requirement, infrastructure requirement, operational & administrative challenges etc. The successful bidder need to study in detail the working of different modules of Daily Operations Application (DOA) of BMTC and the ticketing solution requirements. Bidder shall submit detailed As-Is Study Report and Project Implementation Plan to BMTC.

b) System Requirements Study and Design

The successful bidder shall understand the detailed requirements of the project by interacting with various user departments within BMTC i.e. Traffic, Accounts, Statistics and IT. Bidder shall carry out requirement gathering study to understand the detailed requirements of the project. This also includes requirement gathering of business rules and regulations, accounting practices,

bus operational mechanism which also includes the requirements of servers, storage, ETMs, Software Solution, Integration and Dashboard to meet Head Office requirements, Division requirements, Depot requirements etc. After the requirement study the System Integrator shall carry out the detailed assessment of the functional requirements for the Smart ETMs along with Ticketing Solution and prepare the detailed Functional Requirement Specification (FRS), System Requirements Specifications (SRS) document in consultation with BMTC. This will also include studying existing Software and infrastructure and their re-usability. The process will involve gathering requirements for (cloud-based) data center/disaster recovery, Servers, Storage, networking and functional requirements. Additionally, the bidder should study the existing infrastructure and evaluate its potential for reuse.

c) Supply of ETMs with Ticketing Solution

The Bidder shall supply 11000numbers of Smart ETMs initially on issual of Work Order, along with Ticketing Solution as per the business rules of BMTC.Total requirement is estimated to be around 15,000 numbers over next five years, which shall be required to be supplied as and when the demand arises from the operational units. BMTC reserves the right to decide the quantity of supplies.The proposed Smart Electronic Ticketing System encompasses supply of the Smart ETMs, service and maintenance of the machines. The Smart ETMs should be capable of storing 10,000 ticket details and minimum of 1000 routes each up to 250 stages, process all the logics as per BMTC requirements and print the ticket in the speed of 60 mm/s based on the payment option selected and digital payment processed.

Minimal Hardware and Functional Specification for ETMs is specified in Annexure-I of this RFP.

The bidder shall carry out software design, development, customization, deployment, integration, training & documentation of a comprehensive solution to meet BMTC services/ functions. Solution should be user friendly with enablement of seamless card payment/ card validation, UPI payment, QR ticketing, QR validation to manage all kinds of ticket transactions and digital payments based on the business rules of BMTC during issual of tickets and passes to commuters. Detailed software requirement is specified in Annexure-II of this RFP.

The data generated/reports/API should be available live throughout the contract period for view, download and data sharing to other agencies identified by BMTC.

d) Security Requirements

- The system shall be designed in such a way that maximum optimal output with higher system security will be available.
- The bidder shall have to record & store all the transaction activities of the system for entire contract duration.
- The entire transaction data generated under the proposed system with respect to this RFP will be solely property of BMTC. Bidder shall have to store and record all the data for the entire contract duration.
- The bidder's proposed system shall provide features to maintain data integrity, including error checking, error monitoring, error handling and encryption.
- If any security breach happened in tenure of contract then all security breach detections shall be confidential, and accessible only to BMTCs users of the appropriate group.
- **Data and Infrastructure Security**
  - The selected bidder shall ensure use of HTTPS API for exchange of data between the cloud server, ETMs, application and other external systems.
  - All APIs transferring user data or any other sensitive data shall be protected using suitable encryption techniques.
  - The selected bidder should use private subnets for all cloud servers and components which don't interface with clients directly.
  - Security measures to be deployed to mitigate certain types of attacks.
  - Live Audit Trail and Database Logs to be provided to BMTC.
  - Provide enhanced payment options through various integrations with payment gateway and wallet.
  - Data should reside within Indian Territory.
- **Application Security**

  A centralized authentication and role-based access should be implemented and integrated with all systems including the internal systems, Payment gateway, dashboards and APIs for the BMTC to regulate access to the users.
- **Transaction Security**
  - All Transactions must be encrypted.
  - The ETMs should not allow taking screenshots, video capture, or screen casting on the Ticket/Pass screens.
  - There must be an ability to remotely block/ lock the ETMs when the fraudulent activity found or the ETM is lost.
  - Data downloading and auditing of the ETMs should be done within Depot application where the waybill has been uploaded to ETM.

e) Report & MIS Requirement

MIS (Management Information Systems) and Reporting – Indicative reports but not limited to below:

- Daily report on settlement, reconciliation and transaction clearing in line with ticketing system (Future scope as Bank Host of NCMC might be integrated).
- A consolidated report of the above-mentioned parameters will be provided to BMTC on a regular basis (weekly and monthly)
- The bidder shall provide a web-based application having complete control on information, performance reports and dashboards pertaining to digital transactions and all other relevant information required by BMTC.

f) Integration with other IT sub-systems

BMTC intends to utilize the ticketing data for integration with other sub-systems under the same or other project of BMTC. The data from the central server/cloud is required to be shared with other sub-systems already operational with BMTC or third-party authorities as and when required under open data platform.

i) Integration with existing Automatic Vehicle Location System**(AVLS)**

- BMTC is currently using mysql database and Java forms and reports in all the Central offices/Depots. The vendor should provide interface forms and reports in time as per the requirements without any additional cost during the entire contract period.
- Needful forms/reports with respect to TICKETING and INTERFACE application to transfer data between BMTC database and ETMs to be designed/ modified in time as per the requirements of BMTC without any additional cost during the entire contract period.
- Downloading the ticket data from ETM to the SQL database through bidder developed interface should be as per the table structure specified by BMTC.
- UI (Forms and reports) designed for integration shall have the provision to accept and display KANNADA FONTS.

ii) BMTC may come up with the Financial Institution for introduction of National Common Mobility Card (NCMC). The bidder shall be responsible for integration of ticketing system with futuristic Bank Host system for National Common Mobility Card (NCMC) and reconciliations.

iii) Bidder shall have to provide necessary API and integration support to the BMTC as and when need during the contract period.

iv) Bidder shall have to develop the Open APIs for sharing ticketing data/data generated through this project with BMTC/BMTC identified agencies/third party application, as required by BMTC with no cost. The open APIs shall be plug and play basis.

v) Development of open data platform for BMTC to share ticketing data with other Authorities.

g) Scalable Infrastructure Setup

Bidder should setup a scalable infrastructure to support continuous increase in the ridership and concurrent users for DC and DR. Data Storage, Data backup and Database Management - the separate servers to be kept for Application Hosting, Database, Communication Server, Reporting Server as per the requirement to enable minimum 15000 concurrent users. The support should be available 24 X 7 ensuring uninterrupted services.

h) Enhancements

- Integrations with existing Automatic Vehicle Location System (AVLS) and any designated Payment Gateway, API, WhatsApp Chat Bot etc.
- Selected Bidder shall be responsible for implementation of the new features in ticketing system as per the govt. rules as and when required.
- Providing Cloud and Storage service for hosting of application prioritize scalability, reliability, security, flexibility, and backup/disaster recovery. Hosting of Application in MEITY empaneled cloud hosting.
- Data Migration: Migration of all necessary data from existing Ticketing System and Migration of the live data to Central Cloud Server is the responsibility of the selected bidder.
- MIS Reports &Dashboards: Setup a comprehensive MIS providing reports, dashboards, etc., as per the format approved by BMTC. The reporting solution shall have capability for user configurable Input and Output parameters.
- Integration with IT systems– The Selected Bidder shall be responsible for integrating ETMs with the existing IT systems – AVLS and other BMTC IT applications.
- The Selected Bidder shall be responsible for integrating with the external IT system as per BMTC requests viz., Mobile One, Bengaluru One, any other system as and when required during the contract period.
- When BMTC desires to implement AFCS or any other IT project or additional Mobile App or upgrade the Depot Application during the entire contract period, the vendor shall provide necessary software support including development & integration of forms, reports, database procedures, EMS,

interface application, ETM firmware etc. to meet the business requirements in time. Vendor has to quote the rate per man month required for software development, deployment and support. During development stage vendor has to give the proposal for number of man months required which will be reviewed and approved by BMTC and development works shall be done on mutual agreement between vendor and BMTC.

i) Software Version and Source Code

Vendor should maintain version control of Ticketing Software, Terminal Management Software, Dashboard, Card and other modules (Comprehensive). And the copy of the working software (Bespoke Software) to be handed over to BMTC along with the training at the closure of the contract. The vendor shall take all measures to securely migrate the data as per BMTC requirements during exit.

j) Capacity Building and Training

- The Selected bidder shall provide hands on training to BMTC conductors to operate the ETM machines along with User Manual in Kannada and English Languages.
- Selected bidder shall provide the hands on training to BMTC staff to operate software along with User Manuals.
- Selected bidder shall arrange for Technical Training to IT personnel to handle and maintain the application with handing over of the Bespoke source code during the exit of the contract.

k) SLA Monitoring Tool/Reports

Design, develop, deploy, and maintain Service Level Enterprise Management System (EMS) which has the functionalities required for monitoring the specified SLA, Inventory and track the Complaint.

l) Operations & Maintenance of the Project

- Operations & Maintenance period commences from the date of Go-Live of the project. Period of contract will be four years from the date of Go-Live. However, BMTC reserves the right to extend the contract for another one year on mutual consent at the same monthly rental price.
- Selected bidder is required to estimate the Cloud/SERVER capacity and configuration suitable for web based centralized audit software and receiving tickets data sent through GPRS ETMs.
- Selected bidder shall consider the cost towards Cloud obtainment, application development, software licensing and maintenance of server and application, SIM card charges while quoting monthly rental charges.
- The server and application maintenance charges quoted per

month shall be valid during the entire contract period.

- Implementation and maintenance of server and application will be the responsibility of the Selected bidder for the entire contract period.
- The Cloud Central Servers shall be scalable for future expansion to connect up to 25,000 ETMs.
- The Selected bidder shall be responsible for the maintenance of the application during the entire contract period.
- Selected bidder shall be responsible for uptime of the supplied ETMs for operation.
- Replacement of defective ETM/ materials should be free of cost against any materials and manufacturing defects.
- The selected bidder is responsible for arranging defective devices to be taken from the depots to the service centre/ company and returning the same after service at his own cost and risk.
- Bidder should maintain registers to note the details of devices received from the depots and devices dispatched/ handed over to the depots after attending the problems with details like date, depot, device number, problems reported, repairs carried out and signature of the depot staff.
- Bidder is required to furnish the serial numbers of the ETMs supplied to each depot. ETMs taken for servicing shall be returned to that particular depot only. Bidder is not allowed to transfer ETMs from one depot to other, without any consent from BMTC.
- The bidder shall furnish required maintenance reports from time to time.
- Bidder is responsible for any financial lapses or loss of data incurred by BMTC due to malfunctioning of ETMs, inefficient service/ spares etc.
- The selected bidder shall comply with all statutory requirements during the entire contract period.

m) Others

The successful bidder shall also be responsible for the following activities:

- Obtain relevant certifications for application security and functionality.
- Adherence to latest Industry Standards, guidelines as specified by government authorities.
- Standard Operating Procedures (Manuals, Forms, Process documents) to standardize the processes during O&M phase.
- The successful bidder shall ensure that the end of support for any of the component/equipment is not reached during the

period of contract.

- The successful bidder shall ensure compliance to all mandatory government regulations as amended from time to time.
- The successful bidder shall ensure that all the peripherals, accessories, subcomponents required for the functionality and completeness of the solution including but not limited to devices, equipment, accessories, cables, software licenses, tools, etc. are provisioned according to the requirements of the solution.
- BMTC shall not be responsible if the successful bidder has not provisioned some components, sub-components, assemblies, sub-assemblies required to meetthe RFP requirements. The successful bidder shall have to provision these & other similar things to meet the solution requirements at no additional cost and time.
- The successful bidder shall ensure there is a comprehensive onsite support arrangement for duration of the contract with all the OEMs for respective components.
- Considering the criticality of the infrastructure, successful bidder is expected to design the solution considering the RFP requirement of no single point of failure with high level of redundancy and resilience to meet the network uptime requirements.

n) Exit Management

This section outlines the provisions that will be applicable upon the expiration or termination of the contract. Both parties shall ensure that their respective associated entities fulfill their obligations as outlined in this Exit Management Schedule.

The successful bidder will provide BMTC the following within seven days of receiving a termination notice or six months before the expiry of the contract period:

1) The successful bidder shall provide BMTC with a recommended exit management plan, addressing the following aspects related to project implementation, operation and management, and scope of work definition:
   - A comprehensive transfer process program to be employed in conjunction with a Replacement Bidder, including mechanisms to ensure uninterrupted service provision throughout the transfer process or until the services cease, and details of the management structure to be utilized during the transfer.
   - Communication plans with the Successful Bidder, staff, suppliers, customers, and any relevant third parties to prevent any significant adverse impact on the system resulting from the transfer.

- Plans for providing contingent support to the system and the Replacement Bidder/ Solution Provider for a reasonable period (minimum of six month) following the transfer.

2) Information relating to the current services rendered and data relating to the performance of the services.
3) Entire documentation relating to various Project Milestones, any other data and confidential information related to the Project.
4) All other information (including but not limited to documents, records and agreements) relating to the products & services related to the project.
5) Access to and copies of all information held or controlled by them which they have prepared or maintained in accordance with this agreement relating to any material aspect of the services.
6) Complete source code of ETM Application developed for BMTC by the bidder during the entire contract period.

Throughout the exit management period, the Successful Bidder must exert its best efforts to deliver the services.

D. Roles and Responsibilities

1. Roles & Responsibilities of Successful Bidder

- Act as principal solution provider for the design, development, implementation, integration of ticketing solution and associated applications of BMTC.
- Detailed requirement gathering for all in-scope components and finalization of the business rules, operational rules and system rules to discussions with BMTC.
- Define Project Implementation Plan - device delivery and installation plan (day wise plan with detailed schedule and resource requirement) and software implementation plan.
- Obtain the approvals from BMTC for executing the implementation plan.
- Define the formats for data packet exchange to the AVLS and other IT Applications.
- Adhere to defined SLAs and timelines.
- Submit the test cases & acceptance report.
- Preventive, repair maintenance and replacement of devices.
- Prepare user manual and SOP document.
- Deploy efficient and qualified manpower on field for successful implementation.
- Sharing the application and server logs.
- Security Administration and monitoring Security Incidents.
- Maintain regular backups of Database and Applications.

- Prepare a Risk Management Plan enlisting the risks to the project and mitigation plan and ensure compliance to the same.
- To undertake integration with payment gateway services, as and when required.
- Training to BMTC ticketing staff for operations and administration.
- Provide Training to the BMTC staff on time to time basis.
- Integration with any BMTC internal application/payment application/external application in future as per requirements of BMTC.
- Deployment of resources for implementation stage and O&M period as per the clauses specified in this RFP.
- Capacity Building for BMTC which includes:
  - Support during execution of acceptance testing
  - Preparation of system documents, operation manuals, user manuals, performance manuals, etc.
- Operations & Maintenance:
  - Provisioning and deployment of technical manpower for maintenance and issue resolution of all software and hardware/devices/equipment for the entire contract period.
  - Adherence to latest Industry Standards, guidelines as specified by government authorities

2. Roles and Responsibilities of BMTC

- Providing raw electricity in BMTC depots and ETM charging infrastructure at depot.
- Provide business rules.
- Approval of system design documents.
- Coordination between different departments of BMTC.
- Carry out testing and acceptance of the solution as per contract.
- Any other data from the existing IT Applications required for development and interface.
- Identify the key issues/ bottlenecks in the system and suggest mitigation plans.
- BMTC will provide a safe and secure place with lock and key at each Division for storage of ETMs, spares/ components etc.

E. Manpower Support

The Selected bidder shall provide all necessary manpower for technical support. There should be one point of contact exclusively for coordinating with BMTC for effective management of services. The successful agency winning the bid should have following subject matter experts on its roll who would coordinate with BMTC on respective functional and technical requirements of BMTC.

Sl	Role	Experience	Require

No			d Manpower
1	Project Manager	BE/ MCA/ MBA or equivalent with Minimum 5 years of experience in implementation of Ticketing solution. He/ She should be well conversant with working of STUs and should be able to roll out all the requirements independently. **Responsible:** Will be the one point of contact for all the technical and functional deliverables for BMTC throughout the contract period.	1
2	Solution Architect	BE/MCA or equivalent with minimum 3 years of experience in digital ticketing system and payment gateway integration. **Responsible:** Designing scalable architecture for BMTC as per the requirements of BMTC.	1
3	Cloud / Network Administrator	BE or BCA or equivalent with minimum 3 years of professional network administration experience in cloud environment. **Responsible:** Managing DC, DR, ETM connectivity etc.	1
4	Database Administrator	BE or equivalent with minimum experience of 3 years in Database Management. **Responsible:** Database management including maintaining data security, audit trails, logs, performance management, providing data to BMTC as and when required as per the requirement of BMTC etc.	1
5	UI/UX Design/ Application	BE/ MCA or equivalent with minimum 3 years of relevant experience in UI/UX design, application development and	4

	Development and Maintenance Engineer	maintenance. **Responsible:** For UI design and maintenance as per BMTC requirement.	

Each division/zone of BMTC should be provided with Hardware/Software Maintenance and Support Engineer for servicing and up-keeping of the ETMs at all depots of respective division/zone enabled with required service centers and sufficient spares. He/She shall visit all depots of the division for servicing and maintenance of the ETMs and provide software support as well. The Project Manager should ensure uptime of cloud, web based centralised fare collection software, ETM application, integration with other applications and timely servicing of ETMs meeting SLA conditions.

F. Delivery Schedule

1) Initial supply to be made to each division as specified in ANNEXURE-VI.
2) For subsequent supplies, delivery schedule will be provided by BMTC. Accordingly, the bidder needs to ensure the supply of required number of ETMs in time to the concerned Central Stores, through which the machines to be distributed to depots.
3) The bidders are requested to indicate the minimum lead-time required for delivery, from the date of Purchase Order/ Work Order, meeting the timelines specified in the RFP.
4) Failure to supply as per the delivery schedule furnished by BMTC will lead to disqualification in the future tenders besides forfeiting the EMD.
5) In case of special operations, if BMTC needs extra ETMs temporarily, bidder should be ready to supply the same in consultations with divisions and the same need to be taken back after completion of the operations.
6) The bidder needs to ensure that Chargers and pouches are in good working condition. The same need to be replaced on communication by BMTC if the conditions are not warranted for usage, without any additional cost to BMTC.
7) Monthly rental payments shall be paid by the division on actual number of days it was in BMTC custody.
8) The selected bidder should designate one point contact Manager from their side for regular communications with all BMTC Offices and he/ she should be resident of Bengaluru.

G. Project Implementation Timelines and Deliverables

Sl.	Milestone	Timeline	Deliverable

1	Issuance of Work Order or Letter of Intent	T0	
2	System Study & Implementation Plan	T1: T0 + 10 days	Detailed Project Implementation Plan
3	ETM Software and centralized web based fare collection software Development	T2: T1 + 25 days	
4	Testing, Pilot implementation in one/two depot identified by BMTC and declaration of Pilot Go-Live.	T3: T2 + 10 days	
5	Supply and commissioning of Electronic Ticketing Machines (ETMs) along with ETM Software and centralized web based fare collection software. Final Go-live	T4: T3 + 30 days	Required number of ETMs each with chargers, pouches and other required accessories along with activated SIM card to each division as per the delivery schedule specified in ANNEXURE-VI.
6	Operation and Maintenance of the Project.	T5: 48 Months from the date of Go-Live, extendable by another 12 months as per RFP terms and conditions.	
Note: The entire solution need to be delivered in the time lines provided as above. The bidder needs to deploy multiple teams in order to adhere to the prescribed time lines. The tasks should be taken up in parallel and ensure the time lines are met.			

H. Service Level Requirements

a) The Scope of the Service Level Agreement (SLA) includes Supply & Deployment of ETMs, ETM Service & Maintenance, Centralized web based fare collection Application and ETM application Development & Maintenance along with hosting in Cloud. Payments will be linked to the compliance with the SLA metrics. Non-adherence to the service level requirement will attract penalties as per categories of Service Level Requirements.

b) The SLA parameters shall be monitored on monthly basis as per the individual SLA parameter requirements. However, if the performance of the system/services is degraded significantly at any given point in time during the contract and if the immediate measures are not implemented and issues are not rectified to the complete satisfaction of BMTC, then BMTC will have the right to take appropriate action including termination of the contract.
c) The vendor need to provide web based Complaint Monitoring application for BMTC users at all places to register the complaints with respect to defects in ETM, service requirements, application related issues etc. The system should generate unique ticket for each complaint. Vendor should provide all details about the issues reported and resolved as per BMTC requirements and industry standards.
d) An exclusive Enterprise Management System (EMS), a Web based Application/ industry standard tool to be provided for the use of BMTC to monitor the performance of the vendor with respect to servicing of ETMs and maintenance of Applications. The EMS should automatically calculate the agreed penalty as per the SLA agreed between BMTC and the selected bidder. EMS should generate the SLA Monitoring report at the end of every month, which is to be shared with BMTC on a monthly basis or based on the project requirements. BMTC shall have full access to the EMS portal to extract data (raw, intermediate as well as reports) as required during the project.
e) In case of default on any of the service level metric, the selected bidder shall submit performance improvement plan along with the root cause analysis for BMTC approval.
f) In case multiple SLA violations occur due to the same root cause or incident then the SLA that incurs the maximum penalty may be considered for penalty calculation rather than a sum of penalties for the applicable SLA violations. For example, due to a power outage there is downtime as well as some delay occurs in commissioning/delivering some committed service beyond agreed timelines because of the same outage. This means there are two SLA violations because of the same root cause (outage). Hence, whichever penalty is higher (either for service delivery failure or Downtime) will only be considered instead of adding the two penalties together.
g) The total amount of penalties levied at any month would not exceed 10% of the monthly payable amount for that month with respect to each unit.
h) The quality of services provided by the selected bidder would be considered to have reached ‘Overall Critical Breach Level’, if the total penalty applicable in a month reaches 20% of monthly amount.
i) The state of ‘Overall Critical Breach’ for four consecutive months will be considered as material default in providing services thus

constituting a 'Material Breach'. In case of a material breach, the selected bidder will be given a cure period of one month to rectify the breach failing which another one-month notice to terminate may be issued by BMTC and BMTC reserves the right to terminate the contract.

j) Any violation of the terms and conditions mentioned in this agreement by the vendor will be treated as breach of contract and BMTC reserves the right to impose penalties/ blacklist the vendor or terminate the contract.

1. Implementation Phase

#	Performance Area	Frequency	Baseline	Penalty	Breach	Remarks
1	Deliverables as defined in timelines	weekly	The Selected Bidder shall adhere to the Project Timelines defined in the tender or Revised Timelines approved by BMTC.	Rs 25,000 (Rupees twentyfive Thousand Only) beyond SLA for first 2 weeks and Rs.50,000 (Rs. Fifty thousand Only) for every subsequent week.	2 weeks beyond specified timelines.	Every full calendar week of delay (7days) beyond timeline is defined as a week delay.

2. O&M Phase

#	Particulars	Baseline	Permissible Limit	Penalty	Remarks
1	Availability of ETMs for operations along with reliable SIM card connectivity. (Daily)	100%	N/A	No penalty.	Vendor need to submit the report on availability of ETMs. Depot Officials shall verify and certify. Availability Of ETMs = (Working ETM / Total ETM) x 100%
		<100% and >=95%	N/A	In case the ETM is not working, the same should	Vendor need to submit the report on

				be repaired or replaced within 24 Hrs from the time of registering the complaint. Penalty of Rs. 500 per day per ETM will be imposed beyond 24 Hrs for non-working ETMs.	availability of ETMs. Depot Officials shall verify and certify.
2	Availability of ETMs in working condition (Daily)	< 95%	N/A	Breach, if total number of ETMs available for operations of the depot is less than 95%. • If total number of ETMs available for operations of the depot is less than 95% in any day, 10% of the monthly bills w.r.t. that depot will be recovered from the bills payable by the division. Only 10% will be recovered up to 3 such incidents in a month. • If number of such incidents exceeds 3 in any depot in a month, it shall be reported to Central Offices by the division for action.	
3	Application Availability (Monthly)	100%	99% Non availability time in a stretch shall not exceed	• If 99%> Availability >=97% then Penalty INR 1,000 per Hour. • If 97%> Availability >=95% then	Vendor need to submit report on uptime of the application.

			30 minutes.	Penalty INR 5,000 per Hour. • Breach, if Availability <95%	
4	Discrepancy in data/ Firmware/ Bugs/ Errors/ Defects/ Malfunction/ Issues/ Complaints/ Grievances etc.	None	N/A	Issue to be fixed within 8 Hrs. If not rectified beyond 8 Hrs, a penalty of Rs.500 per day will be imposed. If there are any financial losses are incurred by BMTC owing to bidder's reasons, the same will be deducted from the bills payable.	Vendor shall submit a report.
5	Delay in providing the revised firmware as per the requirements of BMTC	Within specified number of days as mutually agreed from the date of communication through e-Mail/ Letter. (X = Date of Communication)	T = X + number of days mutually agreed	Penalty of Rs. 500 per day from T+1 day onwards till T+7th day. If exceeds T+7th day, Rs1000 per day from T+8th day.	BMTC will certify
6	Availability of functionalities (Daily)	100%	99.50% Non availability time in a stretch shall not exceed 30 minutes.	It shall be reported to Central Offices by the division certifying the hours of inconvenience caused and corresponding financial losses if any. BMTC Management shall decide the incident on case to case basis and pass orders. Decision of BMTC Management will be final in this regard.	
7	Security		Zero	If any incident of	Any incident

	Breach including Data Theft/ Loss/ Corrupt (Monthly)		Instances	security breach: a. Incidents <= 2 Penalty INR 5,000 per incident. b. 2<incident<= 5 Penalty INR 10,000 per incident. c. If incidents > 5 OR If any loss occurs to BMTC and vendor not able to recover the same, then BMTC reserves the right to recommending the vendor to blacklist from participating in future tenders of BMTC.	where in system compromised or any case wherein data theft occurs (including internal incidents). This penalty is applicable per incident. These penalties will not be part of overall SLA penalties cap per month.
8	Unavailability of ETMs (Daily)		Zero instances	If any schedule is cancelled in the depot for want of ETMs, the corresponding amount shall be recovered from the bills payable by the division towards monthly charges.	

Monthly rental and SLA related to servicing of ETMs will be managed by divisions based on ETM service parameters in respective divisions and Central Offices will manage payments related to only Application and related SLA. Selected bidder need to provide the SLA tool accordingly. Selected bidder shall ensure that ETMs required for operation should always be available in working condition at any point of time with respect to each depot.

I. Payment Terms and Conditions

1) The rental price includes the following parameters with end to end solution for the entire contract period as per the requirements of this RFP:
   a. Supply of New ETMs loaded with firmware and activated 5G SIM card ,2 personal computers and 2 dot matrix printers per depot as per BMTC requirements,
   b. Service, repair and maintenance of ETMs including spares and manpower charges,
   c. Development, hosting and maintenance of ETM Application Software, Web based Centralised fare collection Software including audit, dashboard with all required features, terminal management software, integration of external applications, applicable comprehensive deliverables and customizations; in Meity empanelled cloud as per BMTC requirements etc.
   d. All deliverables under this contract should be in good working condition throughout the contract period else the deliverables should be replaced without hampering the operations.
   e. Hosting and maintenance of entire infrastructure (including comprehensive hardware, software and networking peripherals), all types of connectivity and security required for cloud, SIMs, ETMs, Applications etc.
   f. Live Data to be made available throughout the contract period.
   g. Comprehensive hosting and maintenance of entire database (including backups, house-keeping, performance monitoring, migration etc.)
2) Bidder shall quote commercials for evaluation for the following line items. BMTC shall make payment to selected bidder for ETM services on Monthly rental basis.

Sl No	**Particulars**	**End Rate including GST (in Rs.)**
1	Monthly charges for Cloud and Application Maintenance including connectivity charges per ETM.	X
2	Monthly rental charges per ETM including SIM charges, servicing etc. (without SAM)	Y
Total		**(X+Y)= Bid Price *(C)**
3	Monthly rental charges per ETM including SIM charges,	

	servicing etc. (with SAM)	
4	SAM Charges (One time cost per ETM to be quoted)	
5	Spare parts of the ETM's (spare parts shall be listed by the vendor)	

Note:

a) Only sum of line item (1) and (2) will be considered for evaluation of bids, subject to fulfilling the prequalification criteria. (*C)

b) The payment for the line item (1) shall be made at Central Offices and payment for line item (2) shall be made at Division/Zonal level.

c) Payment mentioned in line item (3) will be considered only if SAM is inserted in the ETM and is subject to negotiations.

3) A committee will be formed at division/zonal level comprising of Divisional Controller, Divisional Traffic Officer, Depot Manager to review the working condition of ETMs and to take decision on releasing the payment.
4) Selected bidder shall be responsible for providing ETM software, web based audit software, customized UI as per BMTC requirements.
5) Selected bidder shall be responsible for integrating with existing AVLS application, payment gateway, validation of smart cards, NCMC cards and smart tickets, UPI payment as per BMTC requirements and futuristic IT projects.
6) Selected bidder shall be responsible for conducting Functional Audit, Security Audit of the entire solution including Web based centralized fare collection software and ETM application through a CERT-IN empaneled vendor and obtaining safe to host certificate for hosting the Application. All the costs towards the same shall be borne by the selected bidder.
7) Selected bidder shall be responsible for obtaining VAPT certification of entire solution and also after any major modification done in the application and costs towards the same shall be borne by the selected bidder.
8) Selected bidder shall provide Web based centralized fare collection software, Cloud hosting, ETM and ETM services along with charger, pouches, SAM, battery, printer, scratch free tough rugged screen, 2 computers(minimum i5 processor, 1 TB harddisk, 8 GB RAM, Windows 11, 21 inch monitor) & 2 dotmatrix printers (136 column) per depot and SIM card & and connectivity.
9) The SIM card and required connectivity for all ETMs, Cloud and all the expenses including recurring cost should be borne by selected bidders.

10) Full cost of the ETM shall be reimbursed by BMTC in case of ETM is fully damaged (beyond economical repairs) owing to BMTC handling / missing/ theft of ETM when in BMTC custody and no monthly rental payment shall be made thereafter for such ETMs. Replacement shall be provided in such cases with same terms and conditions.
11) Payment will be made for working ETMs
12) Repair cost of the ETM shall be borne by BMTC in case of physical damage of the ETM when in BMTC custody and no monthly rental payment shall be made from the reporting day of the damage till the ETM is brought back to working condition/ replaced.
13) When the ETM is being handled by bidder's representative or when it is handed over to selected bidder's representative, it is treated as in Bidders custody and BMTC is not responsible to bear any cost towards damaged/ theft/ missing ETMs in such cases.
14) The contract of the services will be for four years. BMTC reserves the right to extend the contract for another one year on mutual consent at the same monthly rental price. The performance of the machines will be reviewed every six months. In case of unsatisfactory performance, BMTC reserves the right to terminate the contract with prior notice.
15) The bidders are required to submit the bills within 5th of every month.
    A. Monthly charges for Cloud and Application Maintenance including connectivity charges per ETM – Payment will be made by the Central Office, BMTC within 5 working days from the date of submission of the bills with required supporting documents.
    B. Monthly rental charges per ETM including SIM charges, servicing etc. (without SAM) - Payment will be made by the respective Zones/Divisions of BMTC within 5 working days from the date of submission of the bills with required supporting documents.

Section-5. Contract for Services

between

_____

[Name of Client]

and

_____

[Name of Bidder/Prime Bidder]

Dated :

I. Contract Agreement

This agreement made the …… day of ……20…. Between Bengaluru Metropolitan Transport Corporation of (hereinafter called “the Client”) of the one part and M/s. …… (Name of Technology Solution Provider) having its registered office at …… (Hereinafter called “System Integrator”) of the other part:

**Note: If the Bidder consists of more than one entity, the above should be partially amended to read as follows:*

AND

A consortium consisting of the following entities, each of which will be jointly and severally liable to the Client for all the Bidder's obligations under this Contract, namely, _____ and _____ (hereinafter referred to as the "System Integrator").

WHEREAS the Client is desirous that Services for Selection of Technology Solution Provider for Supply, Commissioning and Maintenance of Smart Electronic Ticketing Machines (ETMs) with comprehensive Ticketing Solution for BMTC on rental basis and has accepted a tender by the System Integrator for the supply of those services in the Rs. …… (“Fixed cost per Booking” in Words and Figures).

The Bidder, having represented to the Client that they possess the required professional skills, personnel, and technical resources, have agreed to provide the services on the terms and conditions set forth in this Contract.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1.In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2.The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

(a) the Technical Proposal;
(b) the Financial Proposal;
(c) the General Conditions of Contract;
(d) the Special Conditions of Contract; and

The Request for Proposal (RFP) document and conditions, along with any Corrigendum/Standard Set of Deviations therein, shall be considered part of the Contract Agreement.

Description of the Services and Consortium Agreement between the members of the System Integrator (Consortium Agreement to be submitted before the issuance of the Work Order)

The mutual rights and obligations of BMTC and the System Integrator shall be as set forth in the Contract, particularly:

a) The System Integrator shall carry out the Services in accordance with the provisions of the Contract.
b) BMTC shall make payments to the System Integrator in accordance with the provisions of the Contract.
3. In consideration of the payments to be made by the Client to the System Integrator as hereinafter mentioned, the System Integrator here by covenants with the client to provide the services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The BMTC hereby covenants to pay the System Integrator in consideration of the provision of the services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
IN WITNESS whereof the parties here to have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, Sealed and Delivered by the
said .....
(For the BMTC) in the presence of: .....

Signed, Sealed and Delivered by the
said ..... (For the System Integrator)
in the presence of: .....

II. General Conditions of Contract

1. Governing Law

a) The Contract shall be governed by and interpreted in accordance with the laws of India.

b) The Contract shall be interpreted in accordance with the laws of the Union of India. Jurisdiction of Bengaluru only.

2. Governing Language

The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

3. The Contract Agreement

The Bidder whose bid has been accepted shall enter into a written agreement with BMTC within 10 days from the date of issue of Letter of Intent for the proper fulfilment of the contract on lines similar to the terms provided herein, failing which it shall be construed as if the Bidder has entered into binding agreement with the Authority. The Bidder, at their own cost, shall also get the contract Agreement duly adjudicated from the stamp office at Karnataka.

In the event of the bid of a Partnership Firm/ company being accepted, the contract agreement shall be signed by all the partners of the Firm/Company or by the competent persons on behalf of the Firm/Company, subject to production of the necessary resolution or any other documents in support thereof.

4. Period of Agreement

The contract of the services will be for four years. BMTC reserves the right to extend the contract for another one year on mutual consent at the same monthly rental price. The performance of the machines will be reviewed every six months. In case of unsatisfactory performance, BMTC reserves the right to terminate the contract with prior notice.

5. Performance Bank Guarantee

The Performance Security shall be provided by the successful bidder no later than the date specified in the Letter of Intent (LOI) and shall draw a Demand Draft (DD) in favor of “The CAO-FA, BMTC, Central Offices, Bengaluru-560027” or an unconditional Bank Guarantee (BG) from any of the Nationalized Banks or scheduled Banks in favor of the “Controller of Stores and Purchases, BMTC, Central Offices, Bengaluru-560027”

An amount equal to 10% of the Estimated Total Contract Value to be submitted as Bid Security within 10 days from the date of issue of Letter of Intent.

On failure of the Bidder to submit the Performance Bank Guarantee within the due date, penal interest will be charged as decided by BMTC

from time to time until the amount of Performance Bank Guarantee is furnished by the Bidder (both days inclusive). If the Bidder further fails to deposit the amount of Performance Bank Guarantee along with interest within Fifteen days after the expiry of due date, the contract awarded to the Bidder shall stand terminated without issue of any further notice.

The Bank Guarantee should be valid up to 66 months from the date of Letter of Intent. BMTC reserves the right to accept the Security Deposit in any other forms. The Regular Work Order will be placed only on receipt of the Security Deposit.

If Bidder fails to submit Security Deposit within stipulated time period, EMD amount will be forfeited.

BMTC shall also be entitled to make any recoveries due from the Bidder from security deposit submitted against this bid document. There will be no interest on the Security Deposit amount.

BMTC, without prejudice to any of its rights or remedies under this Contract, is free to en-cash the Performance Bank Guarantee in part or in full, in terms. In the event of the invocation of any amount of the Performance Bank Guarantee by BMTC under the Contract, the successful bidder shall immediately take appropriate steps to establish the Performance Bank Guarantee at its full value contemplated under the Contract within 15 days of the date when the Performance Bank Guarantee is wholly or partially invoked by BMTC.

a. Refund of Performance Bank Guarantee:

The amount furnished towards Performance Bank Guarantee may be discharged/ returned / refunded by BMTC, 6 months after Completion of Contract Period, upon being satisfied that there has been due performance of the obligations by the Bidder under the contract, and after adjusting against all incurred expenditure by BMTC for the damages made by Bidder (if any). However, no interest shall be payable on the Performance Bank Guarantee.

b. Forfeiture of Performance Bank Guarantee:

In the event the Agency commits a breach of any of the terms and conditions of the contract or fails to observe and comply with any of the requirements under this contract, the BMTC shall be entitled to forfeit the Performance Bank Guarantee either in whole or in part thereof at his discretion without prejudice to other rights and remedies open to the Authority and it shall be binding on the Bidder. BMTC shall also be entitled to make recoveries from the performance bank guarantee, or from any other amount due to him, the equivalent value of any payment made to him due to inadvertence, error, collusion, misconstruction or misstatement.

6. Facility Inspection

The BMTC reserve the right to conduct inspection of the Office Premises of the tenderers at any time by the Team of Officers before or after the work order to ensure that the firm is having required infrastructure facility to execute the orders and dis-qualify the firm, if found the tenderer is not having required infrastructure facility. The expenses of Travel by Air/Train etc, local transportation, stay charges etc. of the Team of Officers have to be borne /arranged by the bidders.
BMTC shall also have the right to inspect suppliers and third party facilities, including leased premises for providing Services, data center, data recovery centres, documents, records, procedures and systems relating to the provision of the services, but only to the extent that they relate to the provision of the services, as shall be reasonably necessary to verify:
The security, integrity and availability of all Project data processed, held or conveyed by the bidder on behalf of Project and documentation related thereto;

- That the actual level of performance of the services is the same as specified in the SLA;
- That the bidder has complied with the relevant technical standards, and has adequate internal controls in place; and
- The compliance of the bidder with any other obligation under the contract and SLA.

7. Appeal

The Appellant Authority as per provision of KTPP Act of the Government of Karnataka.

8. Force Majeure Clause

a. "Neither party shall be liable for any failure to perform its obligations hereunder where such failure is as a result of acts of God (including fire, flood, earthquake, storm, Hurricane or other natural disasters, war, invasion, act of foreign enemies, hostilities (whether war is declared or not), civil war, terrorist activities, Govt. sanction, blockage, embargo or any such events which are beyond the reasonable control of the parties. Notice informing such occurrence shall be sent the other party within 3 days of such occurrence.
However, the acts such as labour disputes, strikes, lockouts or any such industrial unrest in organisation of the services shall not be considered for such failures".

b. During the existence of any of the above conditions, the services shall be excused from delivering the services to the buyer and the buyer shall be at liberty to obtain such services elsewhere to that extent during such period but shall again resume off take from the services, on receipt of the services notice of readiness to resume performance.

c. Similarly, the buyer shall be at liberty to refuse to accept the

services from the System Integrator and the System Integrator shall be at liberty to provide services elsewhere during the period (when the buyer is unable to receive the services from the System Integrator), but the System Integrator shall again resume services on receipt of the buyer's notice of readiness to resume acceptance.

d. As soon as the cause of Force Majeure has been removed, the Party (buyer or System Integrator) whose ability to perform its obligations has been affected shall notify the other of such cessation immediately and resume supply/ services.

9. Corrupt and Fraudulent Practices

"Corrupt Practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of the public official in the procurement process or in contract execution.

"Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of BMTC and includes collusive practice among the tenderers (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive BMTC of the benefits of free and open competition.

a. Tenderers/ System Integrator / Contractors should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the BMTC to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Tenders.
b. Tenderers / System Integrator / Contractors shall not be under a declaration of ineligibility for corrupt and fraudulent practices issued by Government of Karnataka.
c. Tenderers / System Integrator / Contractors shall not make attempts to establish unsolicited and unauthorized contact with the Tender Accepting Authority, Tender Inviting Authority or Tender Scrutiny Committee after opening of the Tender and prior to the notification of the Award and if any attempt by the tenderer to bring to bear extraneous pressures on the Tender Accepting Authority shall be sufficient reason to disqualify the tenderer.
d. In such cases, the Tender Inviting Authority
    i. will reject a proposal for award if it determines that the Tenderers/ System Integrator / Contractors recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.
    ii. Debarment of Tenderers: - The procurement entity may debar tenderers for a period not exceeding three years from

participation in its tenders following such procedure as may be prescribed on the ground that tenderer is engaged in corrupt or fraudulent practices in competing or executing the contract including misleading the procuring entity at any stage of procurement activity with a fraudulent intention".

e. Furthermore, Tenderers / System Integrator / Contractors shall be aware of the provision stated below:
   i. The Tenderers / System Integrator / Contractors shall permit the BMTC to inspect their accounts and records relating to the performance and to have them audited by auditors appointed by BMTC, if so required.
   ii. BMTC may at any time terminate the Contract by giving written notice to the Tenderers / System Integrator / Contractors, if they become bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Tenderers / System Integrator / Contractors, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the BMTC.
f. Termination for Default
   BMTC may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Tenderers / System Integrator / Contractors, terminate the Contract in whole or part:
   i. if the Tenderers / System Integrator / Contractors fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by BMTC or
   ii. if the Tenderers / System Integrator / Contractors fails to perform any other obligation(s) under the Contract
g. Disputes Resolution Clause
   In case of any legal dispute arising between BMTC and any Tenderers shall be within the jurisdiction of Bengaluru Courts only.

10. Insolvency and Breach

a. BMTC may at any time, by notice in writing summarily terminate the contract without compensation to the Bidder in any of the following events, if the Bidder (Sole Bidder or any consortium member in case of consortium):
b. If a firm, any partner thereof, shall at any time, be adjudged insolvent or shall have a receiving order or order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or enter into any assignment or composition with his creditors or suspend payment or if the firm be dissolved under the Partnership Act, or
c. Being a company is wound up voluntarily or by the order of a court

or a Receiver, Liquidator, or Manager on behalf of the debenture holders is appointed, or circumstances shall have arisen which entitle the Court or debenture holders to appoint a Receiver, Liquidator or Manager, or

d. Commits any breach of the contract not herein specifically provided for.
e. Provided always that such determination shall not prejudice any right of action or remedy which shall have accrued or shall accrue thereafter to BMTC and provided also the Bidder shall be liable to pay to BMTC any extra expenditure it is thereby put to and the Bidder shall, under no circumstances, be entitled to any gain on repurchase.

11. Service Level Agreement

The successful bidder will sign a Service Level Agreement (SLA) with BMTC covering all the required services.

12. Payment Terms

a. Payment of charges will be made on a monthly basis, following the completion of each calendar month. The bidder shall raise a GST invoice that includes a clear breakdown of charges and GST separately, indicating the relevant HSN/SAC codes. This invoice should be submitted for payment after the end of the respective month. The bidder must also provide proof of having uploaded the GST invoice for the previous month along with the current invoice.
b. Tax Deduction at Source (TDS) for Income Tax, as per the provisions of the Income Tax Act, will be deducted from the per Booking charges payable. Additionally, any penalty amounts incurred up to the current date will be deducted from the monthly payable amounts.
c. Payment will be made monthly, starting from the date of Go-Live and continuing thereafter.
d. The payment is subjected to meeting of SLAs failing which the appropriate deductions as mentioned in the SLA of this RFP.
e. If the system is partially implemented and goes live without fulfilling all the required functionality, BMTC reserves the right to retain or deduct a proportionate percentage of the invoiced amount.
f. All Payment will be made in Indian Rupees.
g. Such payment shall be inclusive of all the applicable taxes and it shall be responsibility of the Selected bidder to ensure timely and accurate payment of all the applicable taxes to respective authorities.
h. BMTC shall raise demand notice for applicable SLA penalties on monthly basis. Any penalties imposed on the selected bidder for non-performance as per SLAs shall be deducted in the payable

bill/invoice inclusive of all the applicable taxes. Any additional penalty due, shall also be recovered from the future payment or Security Deposit submitted by the Selected SI. The decision of BMTC in this matter shall be final and binding on both the parties.

13. Rounding off amounts

The total amount due shall be rounded off to the nearest rupee. An amount of 50 paise and below shall be ignored and 51 paise and above shall be reckoned as one rupee.

14. Taxes and Duties

The Bidder shall be entirely responsible for payment of all taxes, stamp duties, license fees, and other such levies imposed etc. to all the concerned Authorities. All the fees, duties, taxes, charges etc. shall be paid regularly to the concerned statutory Authorities / bodies / facility providing institutions / companies etc. by the agency up to the end of contract period.

BMTC shall not be responsible for providing any Compensation to the Bidder / other party in case of any change in the Taxation system in the State / Competent Authority etc.

15. Withdrawal of Contract

If Bidder fails to carry out the said work provided by BMTC, the contract shall be terminated, and no compensation will be paid to the Bidder and EMD and Performance Bank Guarantee will be forfeited. Subject to minimum 6 months of Notice Period.

16. Compliance of Contract

If the Bidder neglects or fails to do anything which they have agreed to do under the terms and conditions of this contract, BMTC may serve a notice to the Bidder asking it to do good the things agreed upon as aforesaid, and on their further neglect or failure to do so, the BMTC shall have rights to fine the Bidder at its discretion or terminate the contract.

All the works as required to be done by the Bidder under the different clauses of this contract shall be carried out by the Bidder within the time specified and the manner set out and to the entire satisfaction of the BMTC. If the Bidder fails to carry out the said works as previously mentioned, the same shall be carried out by the BMTC at its risk and cost and the Bidder shall be liable and bound to pay the said charges for the same to the BMTC immediately on demand at the following rates:

(i) If carried out by engaging any other Agency, then the cost of work carried out by the Agency plus overhead charges at the rate of 10% of the total value of the work done through such Agency.

(ii) If carried out by deploying departmental resources, the cost of work plus the overhead charges on the cost of labour and on the cost of materials as decided by BMTC from time to time.

17. Patent Rights

The Bidder shall indemnify against all third-party claims of infringement of patent, trademark or design rights arising from use of the deliverables.

18. Manuals and Drawings (Wherever applicable)

The manuals and drawings shall be in the English language and in such form and numbers as stated in the contract.

19. Change in Laws and Regulations

Change in Law shall mean the occurrence of any of the following after the date of financial bid: the enactment of any new Indian law; the repeal, modification or re-enactment of any existing Indian law; the commencement of any Indian Law which has not entered into effect until the date of financial Bid; a change in the interpretation or application of any Indian law by a court of record as compared to such interpretation or application prior to the date of financial Bid.

If there is any deviation in existing Law (including policies or taxes) which are causing hardships to the Bidder, the BMTC will take appropriate decision on the same.

20. Indemnity

Bidder shall indemnify, protect and save BMTC against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the software supplied by him.

21. Liquidated Damages

In the event of the Bidder's failure to submit the Bonds, Guarantees and Documents and supply the solution as per schedule specified in this RFP, BMTC may at its discretion withhold any payment until the completion of the contract. BMTC may also deduct from the Bidder as agreed, liquidated damages to the sum of 0.5% of the contract price of the delayed/undelivered services for every week of delay or part of a week, subject to the maximum value of the Liquidated Damages being not more than 10% of the value of delayed services. This right to claim any liquidated damages shall be without prejudice to other rights and remedies available to BMTC under the contract and law.

22. Termination

a. Termination by BMTC

BMTC may terminate this Contract, by not less than thirty (30) days' written notice of termination to the Selected bidder, to be given after the occurrence of any of the events specified in paragraphs (a) through (f) of this Clause and sixty (60) days in the case of the event referred to in (g):

a. If the Bidder does not remedy a failure in the performance of its

obligations under the Contract, within thirty (30) days after being notified or within any further period as BMTC may have subsequently approved in writing.

b. If the Bidder becomes insolvent or bankruptorgoes into liquidation, or receivership whether compulsory or voluntary.
c. If, as the result of Force Majeure, the Bidder is unable to perform a portion of the Services for a period of not less than 60 days.
d. If the Bidder submits to the BMTC a false statement which has an effect on the rights, obligations or interests of BMTC.
e. If the Bidder places itself in a position of conflict of interest or fails to disclose promptly any conflict of interest to BMTC.
f. Where a change of management of the selected bidder has occurred whereby selected bidder company is merged, amalgamated or has been taken over, due to which the majority shareholding of selected bidder has been transferred to another entity and the Client has ascertained based on facts that the new entity is materially deficient in technical and financial capacity compared to the original company and this is likely to materially adversely affect the Project, the Client may terminate this contract by serving the termination notice to selected bidder and therewith give a reasonable opportunity to selected bidder to explain its position on the matter and thereupon give two (2) month’s cure period to selected bidder for rectifying the situation. In case the selected bidder fails to rectify the situation, the Client will have the option to terminate the contract without any compensation damages whatsoever and invoke the Performance Bank Guarantee.
g. If the Bidder, in the judgment of BMTC has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

If the Bidder fails to pay the Charges to BMTC / license fee to statutory authorities /local bodies as per the requirement of RFP, BMTC may make judgment regarding the delay in submission of the same, the reasons for which shall be recorded in writing. BMTC may recover the same from Performance Bank Guarantee and the Bidder shall have next 15 working days to submit the same, failing to which BMTC may give one chance to the Bidder to submit the same.

If the Bidder fails to comply with any final decision reached because of arbitration proceedings.

In the event BMTC terminates the Contract in whole or in part, BMTC may procure, upon such terms and in such manner as it deems appropriate, services similar to those undelivered or not

performed. However, the Bidder shall continue performance of the Contract to the extent not terminated.

BMTC reserves the right to cancel/terminate the contract without assigning any reason, with a prior notice of 3 months.

b. Termination by Bidder

The Bidder may terminate this Contract, by not less than 6 months written notice to BMTC, such notice to be given after the occurrence of any of the events specified in paragraphs a. to b. of this GCC Clause:

a. If, because of Force Majeure, the Bidder is unable to perform a portion of the Services for a period of not less than 60 days.
b. If BMTC is in material breach of its obligations pursuant to this Contract and has not remedied the same within 30days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by BMTC of the Bidders notice specifying such breach.

23. Settlement of Disputes

a. Amicable Settlement

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

b. Dispute Settlement

In the event of any dispute between the Parties arising from matters related to this Contract, which cannot be resolved amicably within thirty (30) days after one Party receives a request from the other Party for such amicable settlement, either Party may submit the dispute for settlement.

Any dispute or differences arising between the parties, pertaining to the implementation, interpretation, operation, or effect of this agreement, its execution, or any breaches thereof, shall be resolved through the decision of the Managing Director, BMTC. In case of any legal dispute arising between BMTC and any Bidder shall be within the jurisdiction of Bengaluru Civil Courts only.

The Bidder's liability to the Client, under or in connection with the Contract, shall not exceed 100% of the Contract Price. However, this limitation does not apply to the Bidder's liability to the Client in cases involving fraudulent or criminal actions and/or omissions, deliberate default, wilful misconduct, or gross negligence by the Bidder, their subcontractors, or any of their agents, employees, or representatives.

Neither Party shall be held liable to the other Party for any indirect or consequential loss or damage suffered by the other Party in connection with the Contract.

III. Special Conditions of Contract

1. Extension of Time

If, at any point during the execution of the Contract, the successful agency encounters circumstances that impede the timely delivery of the Services/license fee, the agency must promptly inform BMTC in writing about the delay, including its expected duration and cause. Upon receiving the agency's notice, BMTC will assess the situation and may, at its discretion, provide a written extension of the agency's performance/delivery timeline as soon as it is feasible.

Failure by the successful Bidder to meet its obligations regarding delivery and completion will result in disqualification for any future bids in BMTC, unless a mutually agreed-upon extension of time is granted.

2. Exit Management

a. Exit Management Purpose

This section outlines the provisions that will be applicable upon the expiration or termination of the contract. Both parties shall ensure that their respective associated entities fulfil their obligations as outlined in this Exit Management Schedule.

b. Exit Management Plan

The Bidder is required to submit an exit management plan ("Exit Management Plan") to BMTC, addressing the following aspects related to project implementation, operation and management, and scope of work definition:

- A comprehensive transfer process program to be employed in conjunction with a Replacement Bidder, including mechanisms to ensure uninterrupted service provision throughout the transfer process or until the services cease, and details of the management structure to be utilized during the transfer.
- Communication plans with the Successful Bidder, staff, suppliers, customers, and any relevant third parties to prevent any significant adverse impact on the system resulting from the transfer.
- Plans for providing contingent support to the system and the Replacement Bidder/Systems Integrator (SI) for a reasonable period (minimum of one month) following the transfer.

The Bidder must review and update the Exit Management Plan on an annual basis to ensure its relevance and accuracy. Each Exit Management Plan must be submitted to BMTC or its designated agencies for approval.

Throughout the exit management period, the Successful Bidder must exert its best efforts to deliver the services.

The Exit Management Plan must be provided in writing to the Bidder or its designated agencies within seven days of receiving a termination notice or three months prior to the expiration of the Agreement.

3. **Publicity**

   Any publicity by the Bidder that includes the name of BMTC should only be done with the explicit written permission of the Chief System Manager, BMTC.

4. **Quality Assurance**

   The Contractor shall institute a quality assurance system to demonstrate compliance with the requirements of the Contract. The system shall be in accordance with the details stated in the Contract. The Engineer shall be entitled to audit any aspect of the system.

   Details of all procedures and compliance documents shall be submitted to the Engineer for information before each design and execution stage is commenced. When any document of a technical nature is issued to the Engineer, evidence of the prior approval by the Contractor himself shall be apparent on the document itself.

   Compliance with the quality assurance system shall not relieve the Contractor of any of his duties, obligations or responsibilities under the Contract.

In addition to this Agreement, Non-Disclosure Agreement (NDA) to be signed by the selected bidder